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Community Quality-of-Life Indicators: Best Cases V

Springer

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Community Quality-of-Life Indicators: Best Cases series

Volume 3

The Community Quality-of-Life Indicators: Best Cases book series is a collection of books, each containing a set of chapters related to best practices of community quality-of-life indicators projects. Many communities (cities, towns, counties, provinces, cantons, regions, etc.), guided by their local planning community councils and local government, and other organizations, develop community indicator projects. These projects are designed to gauge the "social health" and well-being of targeted communities. These projects typically involve data collection from secondary sources capturing quality-of-life indicators (i.e., objective indicators capturing varied dimensions of economic, social, and environmental well-being of the targeted communities). The same projects also capture community well-being using primary data in the form of survey research. The focus is typically subjective indicators of quality of life such as community residents' satisfaction with life overall, satisfaction with various life domains (e.g., life domains related to social, leisure, work, community, family, spiritual, financial, etc.), as well as satisfaction with varied community services (government, nonprofit, and business services serving the targeted communities). The book series is intended to provide community planners and researchers involved in community indicator projects with prototypic examples of how to plan and execute community indicator projects in the best possible ways.

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Preface

Community indicators are not a new phenomenon. Indicators of various sorts have been used over a long period of time. For example, in 1910, the US-based Russell Sage Foundation initiated the development of local surveys for measuring industrial, educational, recreational, and other factors (Cobb & Rixford, 1998). The processes used by the Sage Foundation are similar to those that reemerged during the latter half of the twentieth century. These newer approaches are a bit different though, with the emphasis on considering the full spectrum of a community's well-being, not just isolated factors. This reflects the importance of, and desire for, sustainable approaches for community and regional well-being and incorporates the now well-recognized "three E's" of sustainability – equity, environmental, and economic aspects.

In the past, indicators were mostly identified and used by a top-down approach; now, indicators are used by many constituencies within a community, not the least of who are its citizens. The strength of a community indicators measuring system is directly related to the involvement of citizens. It's clear that citizens are not merely content to watch what happens, they want to be involved in identifying, directing, and measuring progress in their communities. And it's this aspect that is particularly encouraging – if citizens participate in the identity, calibration, and use of indicators, then there's a greater chance that measuring and obtaining progress toward desirable community goals will occur (Phillips, 2003). This ability to effect positive change is at the heart of the usefulness of community indicator systems. Nearly a decade ago, Thomas Kingsley declared, "Community indicators drive change" (Kingsley, 2002 cited in Phillips, 2003). He directs the National Neighborhood Indicators Project (NNIP), an indicators research and education initiative with numerous community partners. In 2002, NNIP had 19 community partners, now there are 34, evidence of the power that indicators can have as change agents in society. An update of NNIP is provided in Chapter 4.

In addition to citizen engagement and participation, sustainability is a focus in many chapters in the volume as well – not only sustainability as a community or regional approach but also sustainability of indicator systems as well. We're at a juncture now with many community indicator projects, where some have been implemented into decision making at the policy level in communities while others

have not achieved longevity. How do we ensure that indicator systems are both used and valued? One way to do so is through a coordinated advocacy of their use from such organizations as The International Society for Quality of Life Studies (ISQOLS) and the Community Indicators Consortium (CIC) (see website contact information at the end of this preface). These organizations have been developed, in part, due to a desire by both academics and practitioners to make public policy decision makers aware of the wealth of tools that are available to them when making decisions concerning their local, regional, and national communities. CIC, in particular, has raised awareness among community planners by providing both theoretical and application tools through their conferences and the four previous volumes of this publication. In continuing this work through this volume and those to follow, the long-term goal is to provide community decision makers with an indispensable collection of measurement methods and a "best cases library" to give examples of how to apply those methods. At the same time, advocacy cannot forget the fifth estate. These volumes can be used to school the media in how monies spent on these indicator projects are as valuable, if not more, as the traditional single-dimensional economic indicators that legislators and other funding agencies commit to community projects.

The scope of projects presented here runs the gamut from locally focused, metropolitan-level applications, to rural contexts, to regional approaches. We are pleased to present this collection of 14 chapters, and hope that it will inspire additional, and valued, applications of community indicator systems.

We begin the volume with Chapter 1, "Comprehensive Local Community Development via Collaborative Quality of Life Planning: Best Practices from Two San Diego Neighborhoods," by Mirle Rabinowitz Bussell and Kerry Sheldon. This case presents a quality of life planning tool, developed while participating in the Local Initiatives Support Corporation's Sustainable Communities Initiative. San Diego's efforts to foster community cooperation, coordination, and resident engagement in two low-income neighborhoods are chronicled, with best practices factors discussed.

Next, Chapter 2 "Developing and Sustaining a Community Information System for Central Indiana: SAVI as a Case Study," by David J. Bodenhamer, James T. Colbert, Karen Frederickson Comer, and Sharon M. Kandris presents the history and development of a large data system since the early 1990s. This community information system, the Social Assets and Vulnerabilities Indicators (SAVI), integrated multiple datasets with visualization tools. Lessons and recommended practices are provided that are useful for learning about increasing usability and longevity of community indicator projects.

In Chapter 3, "Sustaining the Operations of Community Indicators Projects: The Case of Twin Cities Compass," Craig Helmstetter, Paul Mattessich, Andi Egbert, Susan Brower, Nancy Hartzler, Jennifer Franklin, and Bryan Lloyd focus on sustainability of indicator projects. As mentioned previously, this is of vital concern to many and provides information on how operations can be sustained over time. It uses the case study of Minnesota's Minneapolis-St. Paul 7-county metropolitan area; it is similar to many other projects driven by the mission to help improve the

region's quality of life and economic competitiveness. Strategies are discussed for maintaining an audience and clientele with core activities as well as for diversifying funding with contractual work.

In looking at the broader scale of collaborative work in US indicator projects, Thomas G. Kingsley and Kathryn L.S. Pettit provide a review of their efforts at NNIP in Chapter 4, "Quality of Life at a Finer Grain: The National Neighborhood Indicators Partnership." It tells the story of a network of indicator projects rather than focusing on one case. Further, it provides a level of analysis that is not seen as frequently, that of the neighborhood. The value of expanded networks and developing capacity is discussed, as well as links to tools and guides.

Chapter 5, "Sustainable Well-Being Initiative: Social Divisions and Recovery Process in Minamata, Japan," by Takayoshi Kusago is an inspiring case about the recovery of a community trying to cope with some of the worst industrial pollution situations in the world. This story can serve as a lamppost for like communities around the world currently trying to come to grips with the massive environmental problems brought about by rapid industrial expansion that has occurred globally. The story illustrates the power of community through citizen action and local leadership. Jimotogaku, as a philosophy of neighborhood revitalization, is explained – a profound practice with a driving principle of, "Stop asking for what we do not have, let us start from finding out what we have." This is one of the fundamental essences of sustainability, building on inherent assets versus reliance on external factors.

"The American Human Development Index: Results from Mississippi and Louisiana," Chapter 6 by Sarah Burd-Sharps, Patrick Guyer, Ted Lechterman, and Kristen Lewis examines a composite measurement of well-being and opportunity for two of the most distressed states in the United States of America. The data are humbling, and the need for policy response quite clear from their analysis of three dimensions of indicators: health, knowledge, and standard of living. The authors go beyond analyzing the data to discuss implications and recommend policy responses. They begin their chapter with a quote from 1968 that makes one stop and ponder the question about what we measure and why, and the all-important relations to quality of life. It bears excerpting here to give us pause:

> Our gross national product. . .if we should judge America by that – counts air pollution and cigarette advertising, and ambulances to clear our highways of carnage. It counts special locks for our doors and the jails for those who break them. It counts the destruction of our redwoods and the loss of our natural wonder in chaotic sprawl. . .Yet the gross national product does not allow for the health of our children, the quality of their education or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages; the intelligence of our public debate or the integrity of our public officials. . .it measures everything in short, except that which makes life worthwhile.
>
> Robert Kennedy, March 18, 1968

Chapter 7, "The Metropolitan Philadelphia Indicators Project: Measuring a Diverse Region," is by Brian Lockwood, Jason Martin, Cathy Yinghui Cao, and Michelle Schmitt. It profiles the case of a massive US indicators project, encompassing 353 municipalities spanning 9 counties in the states of Pennsylvania and New Jersey. Driven by the need to "think regionally while acting locally," the project helps

connect local work to broaders patterns and trends. Five typologies are used for different kinds of communities throughout the metro area, and these are useful for capturing variation between areas located within individual counties.

Chapter 8, "Portraits of Peel – A Community Indicators Portal Project," by Srimanta Mohanty provides another regional approach to indicators. Using the case of Peel, adjacent to the City of Toronto, Canada, the author provides three portals of information as tools in community well-being: an online database, target group profiles, and overall statistics. It creates a new level of data accessibility and usability, helping foster social policy changes in this region of over one million inhabitants.

In Chapter 9, we shift attention to rural applications of community indicators. The universality of the desire of communities to monitor their well-being is seen in "The Development of Quality-of-Life Indicators in Rural Areas in Iran: Case Study – Khaveh Shomali District, Lorestan Province." Authors Mohammad Reza Rezvani and Hossain Mansourian measure quality of life using objective and subjective indicators. The weighting of various measures is discussed, along with development of a composite index to gauge quality of life in overall terms.

Chapter 10, "Working for Water: A Baseline Study on the Impact of a South African Public Works Programme in Improving the Quality of Life of Programme Beneficiaries," by Robin Richards, results from a survey of experimental and control groups. In this chapter the author provides a tool to policy makers in developing economies to help them allocate scarce resources to critical projects and monitor their success or failure. Such monitoring ability is becoming even more crucial in today's world to be able to attract funding from a variety of not only government organizations, but from global aid organizations and other non-government organizations (NGOs). Objective measures of quality of life as well as subjective measures are analyzed to gauge the socioeconomic impact on households of this large public works program. Various dimensions are explored, including the ability for participants to make positive contributions to community quality of life.

Branko Cavric's Chapter 11, "Integrating Tourism into Sustainable Urban Development: Indicators from a Croatian Coastal Community," provides a case of indicators applied in a situation where spatial transformations and transitions are the focus. Using a GIS (Geographic Imaging System) system, indicators for sustainable urban development are presented for five major components. Rather than take a purely technical, top-down approach to indicator development, the project incorporated citizen and local leadership input to identify focus areas and priorities, with particular emphasis on the final users of the city's space.

Chapter 12, "Quality of Life in Buffalo City: The Changing Position of African Women in a Post-Apartheid City," by Leslie Bank and Ellen Kamman, explores quality of life data collected from 2001 and 2007. Exploring the situation post-apartheid provides insight into whether or not policies aimed at redressing inequalities are having an impact on African women. A survey conducted in both years provides the data on a variety of factors ranging from standard of living to emotional well-being. As with the Richards' piece such data are invaluable in helping transitional economies gather needed funding for optimal transformation toward a

better QOL. We see the same transformational data use in the following longitudinal work by Moller and Radloff.

Valerie Moller and Sarah Radloff look at "Monitoring Indicators of Living Conditions in a South African Urban Community," in Chapter 13. As with the prior chapter, this work utilizes data from household surveys: this time, conducted in 1999 and 2007. The focus of the work looks at South African service delivery in the post-apartheid context of human rights and rising expectations in Rhini, a low-income suburb of Grahamstown. While major changes in living standards were found, there are issues that are diluting gains overall.

Rounding out the volume is Chapter 14, "Community Indicators in Action: Using Indicators as a Tool for Planning and Evaluating the Health and Wellbeing of a Community," by Melanie T. Davern, Sue West, Sally Bodenham, and John Wiseman. This case presents Community Indicators Victoria, a project located within a southern state of Australia. The emphasis of this project centers on developing indicators for informed, engaged, and integrated community planning. Public health planning led to the development of a wide range of community indicators addressing community safety, youth, positive ageing, cultural diversity, and early childhood, for example.

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Websites of Interest: International Society for Quality of Life Studies (ISQOLS); http://www.isqols.org Community Indicators Consortium (CIC); http://www.cic.org

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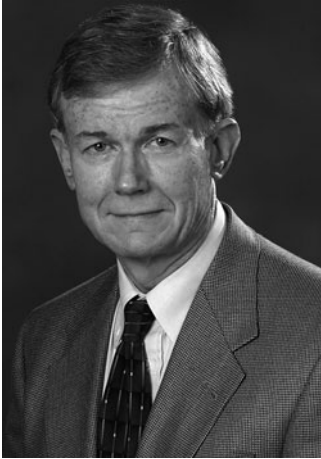
David J. Bodenhamer (Ph.D., Indiana University, 1977) is executive director of the Polis Center, professor of history, and adjunct professor of informatics at Indiana University Purdue University Indianapolis. He founded the center in 1989 as a multidisciplinary unit dedicated to using collaboration, applied research, and knowledge of advanced spatial technologies to provide reliable information and creative solutions for the improvement of communities in Indiana and beyond. He also has published widely on the use of spatial theory and spatial technologies in the humanities and has developed numerous partnerships in the United States, Europe, and Asia to advance this rapidly growing field.

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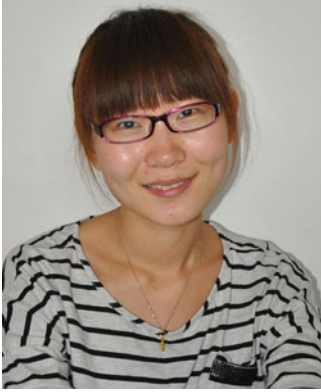
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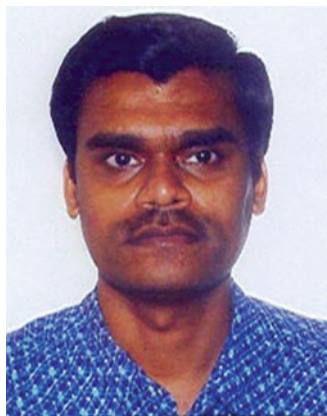
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Chapter 1
Comprehensive Local Community Development via Collaborative Quality of Life Planning: Best Practices from Two San Diego Neighborhoods

Mirle Rabinowitz Bussell and Kerry Sheldon

Abstract This study presents best practices in the quality of life planning process in two low-income, multiethnic urban neighborhoods in San Diego, California. We focus on the planning process since community engagement is frequently identified as a critical factor in successful quality of life planning, but the processes through which this occurs require further investigation. We analyze case studies from the Neighborhoods First initiative, a quality of life planning process launched in 2008 by San Diego LISC, a community development intermediary. Based on the Neighborhoods First experience, we found that the quality of life planning process in low-income urban neighborhoods benefits from five critical factors: (1) stakeholder participation that combines recognized neighborhood leaders and emerging leaders; (2) planning processes paired with immediate outcomes; (3) facilitators who ensure timely completion of the process; (4) transparency in the process; and (5) early acknowledgment and incorporation of each neighborhood's unique history.

Introduction

The contemporary community development movement took root during the late 1950s and early 1960s in response to the widespread failure of federal urban policy. The deleterious effect of federal urban renewal in concert with the pervasive malaise in low-income urban neighborhoods gave rise to grassroots organizing and empowerment (O'Connor, 1999). Community development corporations (CDCs) were established with a primary emphasis on community organizing, participation, and networking (Vidal, 1992). As these organizations matured, their capacity expanded and their programmatic efforts shifted to physical infrastructure improvements such as the construction of affordable housing, community centers, health care clinics, day care facilities, and technology centers (Pearce & Steinbach, 1987; Vidal,

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1992). In many neighborhoods, they became the primary vehicle for community development programming and implementation.

While CDCs have exhibited a tremendous aptitude for physical community development, there has been a growing recognition that the most effective form of local community development is holistic in nature, encompassing physical and economic development as well as health and human services, and is rooted in a community organizing approach that coordinates resources and stakeholders around the effort. In many respects, the community development movement is returning to its early roots in comprehensive community efforts bridging physical, social, and economic efforts. In 2007 the Local Initiatives Support Corporation, a national community development financial and technical intermediary, invested $1.1 billion in its Sustainable Communities Initiative. This comprehensive approach to community development is premised on the belief that community cooperation and coordination and resident engagement are essential for successful neighborhood-based planning and implementation. It is important to note that LISC's ultimate goal is to foster quality of life improvements in a community. Many LISC sites, including San Diego LISC, use a "quality of life" planning process as a tool to catalyze these tangible improvements. The planning process serves a number of functions. First, it allows for the identification of quality of life indicators that are important to the community. Second, it fosters community engagement that is central to LISC's mission. LISC argues that for community development to successfully move forward, the needs and desires of the residents must be adequately understood, and neighborhood residents must be engaged in the process. Third, it serves as the place to foster the cooperation and coordination among the various institutions and actors within a community to implement the quality of life improvements identified by the community. Local LISC offices across the country are currently engaged in efforts to apply this model. As one of the leading sources of funding for local community development, LISC's programmatic priorities will have a sizeable impact on the field. This chapter documents and analyzes the experiences to date of LISC's interpretation and execution of this model in the city of San Diego with its Neighborhoods First initiative.

Our examination of best practices from the San Diego LISC effort enumerates the extent to which successful quality of life planning is intrinsically linked to the processes used to both identify critical neighborhood-based quality of life indicators as well as to implement strategies and responses to address these issues. Community engagement is frequently identified as a critical factor in successful quality of life planning, but the processes through which this occurs are in need of further study. This study analyzes the quality of life planning process in two separate multiethnic urban neighborhoods in San Diego that have a history of chronic disinvestment. This illustration of best practices identifies factors critical to sustaining success. Based on the Neighborhoods First experience, we argue that the quality of life planning process in lower-income urban neighborhoods benefits from five critical factors:

(1) Stakeholder participation is enhanced by including recognized neighborhood leaders in conjunction with emerging leaders;
(2) Planning processes should be paired with immediate outcomes, even if they are small scale;

(3) Process is important, but implementation is the ultimate objective and outside facilitators fill a crucial role by ensuring that participants keep the process moving;

(4) Transparent processes are vital for community buy-in; and

(5) The unique histories of every neighborhood must be acknowledged at the start and must be respected and incorporated into the process.

Methodology

This chapter analyzes the process used to facilitate quality of life planning and implementation in two San Diego neighborhoods. The analysis derived from numerous internal evaluations and documents prepared by LISC staff. These were supplemented with multimedia documentation of the process. LISC and its community partners in the Neighborhoods First initiative have created film, public art, web-based content, and social media documentation to illuminate the histories of the two pilot neighborhoods' quality of life planning processes.[1] In conjunction with these materials, we conducted focus group interviews with over 12 stakeholders from the two neighborhoods that piloted San Diego LISC's Neighborhoods First initiative. The focus groups were structured to gather qualitative responses pertaining to stakeholders' own evaluations of the strengths and weaknesses of the Neighborhoods First quality of life planning and implementation process. Community members as well as staff members from participating nonprofit organizations contributed to the focus groups. The next section provides an overview of the structure of Neighborhood First.

The Neighborhoods First Initiative

In early 2008 the San Diego office of LISC launched the Neighborhoods First initiative in two pilot neighborhoods. Neighborhoods First approaches neighborhood-based quality of life planning in a comprehensive and coordinated fashion encompassing physical, economic, social, cultural, and individual development. Critical to its mission, Neighborhoods First is "built on the fundamental understanding that an engaged and empowered community generates the wherewithal, resilience, and will to implement such a program" (San Diego LISC, 2009a). Neighborhoods First is San Diego's articulation of national LISC's Sustainable Communities Initiative. Intermediaries such as LISC have a long history and documented track record of supporting local community development (Ferguson & Stoutland, 1999; McDermott, 2004). LISC was established in 1979 and has directly invested $9.6 billion, leveraging an additional $29.5 billion to support its work. In 2006, national LISC embarked on a critical reevaluation of its funding and programmatic objectives

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[1]Many of these are identified at the end of the chapter.

and came to the conclusion that while it had successfully facilitated a considerable amount of physical renewal in neighborhoods across the country, it was time to incorporate a more comprehensive component to its work. With a focus on building healthy communities, LISC rededicated itself "to build communities that offer the positive environments needed to ensure that all residents of varied income levels are provided the opportunities and tools to build assets, to participate in the benefits inuring to their communities, and to become part of the mainstream economy" (LISC, 2007). It is now transitioning to an approach that focuses on comprehensive quality of life efforts, and it is providing technical and financial resources to its local LISC offices to realize this goal.

San Diego LISC's Neighborhoods First initiative uses a community-driven, process-oriented approach to quality of life planning that depends on deep levels of resident engagement. Notably, San Diego LISC did not predetermine the quality of life indicators for the communities. The process was structured so that all residents would have equal levels of ownership in identifying key quality of life indicators as well as developing clearly defined plans for achieving healthy quality of life objectives. Further, with LISC's focus on the ultimate goal of fostering tangible quality of life improvements, its planning process is dedicated to the quality of life indicators where there is "community will" to move forward with implementation. LISC believes this community will is the critical factor in whether the plans lead to actual quality of life improvements. Although a more data-driven approach might reveal different or additional quality of life indicators, LISC's process places more value on the existence of community will to move forward in a certain area. San Diego LISC recently completed three out of the four planned phases of its pilot Neighborhoods First program and is in the midst of its final phase; thus it is useful at this point in the process to evaluate its successes and shortcomings to date, analyze lessons learned, and identify best practices.

We begin with a discussion of the Neighborhoods First model. The Neighborhoods First approach to quality of life planning is structured around a four-phase process: neighborhood selection, community engagement, quality of life planning, and plan implementation. San Diego LISC, in its capacity as an intermediary organization, deliberately articulated its own role as a macro facilitator charged with overseeing the quality of life planning process and providing the resources and support needed to guide the process. Critical, however, was its decision to remove itself from the actual planning process and decision making. At the beginning it realized that a secondary intermediary was required and identified the need for a convening agency in each community. These are community-based organizations with the neighborhood knowledge, capacity, and trust necessary to lead the local quality of life planning effort. By empowering a local organization to lead the process, San Diego LISC explicitly acknowledged the importance of community-driven quality of life planning. At the same time, San Diego LISC recognized the need for neighborhood-level accountability. So, although the Neighborhoods First process is collaborative, San Diego LISC deliberately funded a single organization, the convening agency, for the purposes of implementing this effort.

The first phase in the Neighborhoods First process therefore involved identifying two pilot neighborhoods and a convening agency from each neighborhood. San Diego LISC invited its current partners to propose a community of 10,000–40,000 people with defined geographic boundaries. Qualifying neighborhoods ideally had a combination of need, opportunity, and readiness considerations, where readiness primarily related to community engagement infrastructure. A panel of independent practitioners and academics worked with LISC to evaluate the applications based on these criteria.

Upon completion of the first phase and identification of the two pilot neighborhoods, San Diego LISC provided technical and financial assistance to the convening agencies to undertake the community engagement phase. The goal of this second phase involved relationship building with community leaders, especially nontraditional and emerging leaders. One of the objectives was to capture the indigenous knowledge and leadership potential of residents who might not typically be enfranchised in formal neighborhood planning efforts. This was one of the most challenging components of the process for the convening agencies. As discussed later in the chapter, each neighborhood had its own unique issues that provided challenges to commencing and sustaining the engagement process. This was readily apparent because LISC's Neighborhoods First process specifically asked each pilot neighborhood to identify, meet, and engage at least 100 neighborhood leaders in a short period of time. In both neighborhoods, the convening agencies engaged and convened steering committees representing 10 or more diverse organizations. These steering committees held more than 150 one-on-one relational meetings with emerging leaders in the neighborhood – deepening neighborhood relationships and broadening their understanding of the community. They also convened house meetings to engage residents in a more intimate process of visioning for a better future. LISC staff initially allocated 3 months for this process but soon realized that additional time was required by the convening agencies and extended this phase by another 3–6 months. Each pilot neighborhood experienced specific challenges with the engagement process, and these are discussed in more detail later in the chapter.

After completing the engagement process, Neighborhoods First entered the third phase. This phase was designed as the planning stage with an end goal of preparing a community-created, short-term, action-oriented quality of life plan organized around a shared community vision.[2] San Diego LISC strategically structured Neighborhoods First so that the planning process moved forward quickly, but with great depth. Further, LISC integrated the concept of "early action projects" within the planning process to allow for quick, tangible improvements to be realized during the planning phase. As discussed below, both of the pilot neighborhoods are multiethnic and multiracial urban communities that have suffered from decades of disinvestment and decline. And while they have been subject to endless studies

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[2]These plans are available at http://www.sdapa.org/home/index.php and http://www.lisc.org/san_diego/assets/asset_upload_file1000_10037.pdf.

and planning, actual implementation has been erratic and community stakeholders were wary of participating in yet another exercise that would not yield any tangible outcomes.

San Diego LISC staff had clear expectations of how the planning process should unfold based on the experience of other LISC programs. The process started with a large community meeting to discuss and agree on a shared vision and core strategy areas. In this first step it was very important that the community representation overwhelm organizational representation. The relationships built during the community engagement phase were intended to facilitate this outcome. This allowed the rest of the process to be unassailable and delineated the organizations as servants of the community as opposed to the other way around. From this step a planning committee comprised of community organizations and residents then took the strategy areas contained in the vision and developed the concrete projects and programs to be undertaken to achieve the vision. The planning committee was also responsible for recruiting "Project Leads." The quality of life plan was developed such that every project that was included identified a specific organizational lead committed to carrying it out. During the planning phase, the communities both agreed to exclude any projects that did not have a committed community-based champion, or lead organization, willing and capable of implementing the project. This was designed to ensure accountability and promote the goal of facilitating community ownership of the process. Further, it was also intended to overcome residents' concerns about previous planning efforts that did not result in tangible improvements. Since the neighborhood stakeholders had ownership of the plan, the planning committees agreed that government agencies should not serve as project leads. Initially this phase was designed to last for 6 months, but it was extended to 9 months.

During the planning process, each community was allocated four $5,000 grants to award at its discretion to support early action projects that could be completed within 6 months. LISC staff was initially concerned that the competition for these grants would be problematic with too many applicants to accommodate, but as discussed below both pilot neighborhoods were able to allocate the funds with relative ease.

Having completed the quality of life plans and the early action projects, the pilot neighborhoods are in the early stages of the fourth phase of the process which focuses on implementation of the major quality of life objectives identified in the plans. As part of the implementation phase, the project leaders will be positioned to move forward with their projects and LISC will provide training, technical assistance, marketing and communications support, and some direct funding. LISC's primary role will be to broker resources from other sources to support the initiatives that are positioned to move forward in the quality of life plans. This phase is intended to last for at least 3 years.

As Neighborhoods First enters its fourth and final phase, it is instructive at this point in the process to analyze the progress of the initiative to date from the perspective of the neighborhood participants. We sought to identify valuable lessons learned and best practices. This will be useful for the final phase of the effort. On a larger scale, San Diego LISC, national LISC, and other community development organizations across the country are scaling up similar efforts. The lessons from

San Diego should be beneficial to others. The next part of the chapter analyzes the Neighborhoods First process in the two pilot neighborhoods from the perspective of the participants and is based on qualitative evaluations derived from structured focus groups.

Quality of Life Indicators and Collaborative Planning Processes

This section contains an analysis of the process that resulted in each pilot neighborhood completing the first three phases of the Neighborhoods First initiative. As discussed previously, as part of the first phase of Neighborhoods First the San Diego LISC staff invited a select group of neighborhoods to submit a proposal for consideration as one of the first pilot neighborhoods in the program. Colina Park and Greater Logan Heights were ultimately selected. In some respects, the neighborhoods share similar attributes. Both are in close proximity to the central business district and both are urban neighborhoods with low-income, multiethnic, and multiracial populations. The neighborhoods, however, diverge in significant ways that contributed to different outcomes with respect to processes and plans. As was anticipated, the unique attributes of each neighborhood yielded variations in how the three phrases played out. We frame the comparison by focusing on five critical factors that applied to both neighborhoods: (1) stakeholder participation, (2) linkages between plans and outcomes, (3) commitment to the process, (4) transparency in the process, and (5) respect for the unique history of each neighborhood.

Case Study: Colina Park

Colina Park is located east of San Diego's downtown core and is situated in the larger community of City Heights (see Figs. 1.1 and 1.2). City Heights is known as San Diego's "gateway" for new immigrants and refugees, in large part due to the prevalence of affordable housing and a large network of social service and non-profit organizations (Martinez-Cosio & Rabinowitz Bussell, 2009). In 2000, 55% of City Heights' residents were foreign born. Unlike other communities in City Heights, Colina Park is less well connected to the rich web of social providers in the larger City Heights community. Colina Park is referred to by some people as Little Mogadishu because of its large Somali population, but it also has numerous Vietnamese, Latino, and African residents. Home to many recent immigrants, it has been viewed as a transitory community used by families as a place of first residence in the United States. As such, it does not have a strong core of grassroots institutions and leaders.

In 2000 Colina Park had a population of 13,711 people, 40% of whom were under the age of 18. The diversity of the community is reflected in the population that is 50% Latino, 21% Asian, 16% African American, and 54% foreign born. Poverty is pervasive in the community and 43% of the households have incomes below the poverty level. The median household income in the community is $18,151; 95% of
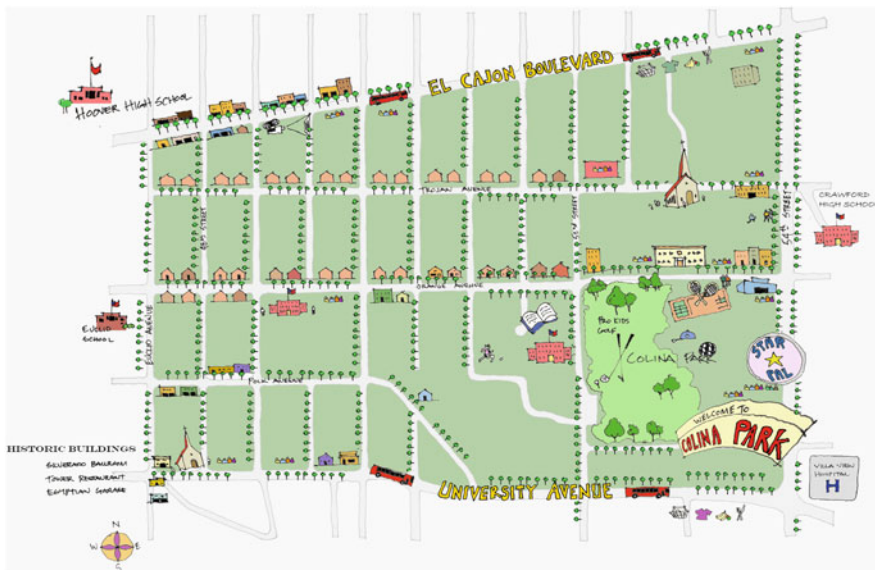
Fig. 1.1 Map of Colina Park. (Source: San Diego LISC)
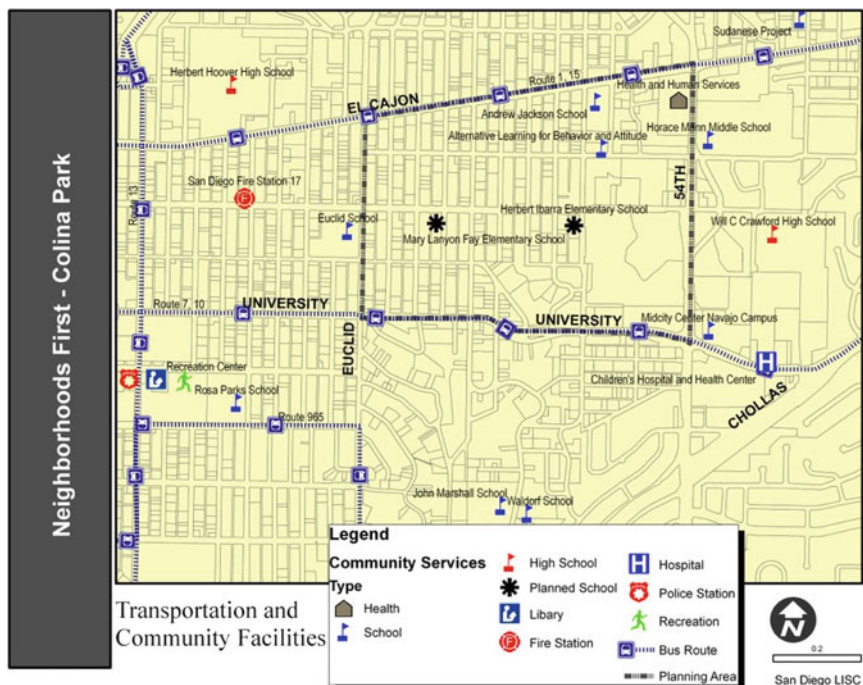
Fig. 1.2 Colina Park community facilities (Source: SanGIS; San Diego Metropolitan Transit System)

the households are renters, and overcrowding is present in 53% of the community's housing units.

The convening agency for the Colina Park Neighborhoods First initiative is City Heights Community Development Corporation. This nonprofit organization has been serving the larger City Heights neighborhood for close to 30 years and is well connected and well known to many residents and organizations in the neighborhood. As such, when it was time to begin the engagement process, City Heights CDC was able to effectively leverage these connections. The majority of focus group participants noted that they heard about the Neighborhoods First program from the CDC, and some of the nonprofit organizations were directly contacted by City Heights CDC and asked to participate. This facilitated a relatively smooth first iteration of partnering and reflects the efficacy of selecting a known and respected convening agency. Several focus group participants noted that the credibility and reputation of both the CDC and LISC engendered confidence in the process and served as a draw for many organizations.

While City Heights CDC was effective at assembling the nonprofit partners and known neighborhood leaders, it was considerably more challenging for it to identify the emerging leaders in the neighborhood. San Diego LISC knew from the outset that this would require a dedicated effort from the convening agency and attempted to screen for this capacity during its neighborhood selection process. It launched Neighborhoods First with an understanding that neighborhood planning and implementation efforts were necessarily grounded in a broad set of community organizing strategies including listening, dialogue, and relationship building. LISC asked the convening agency to hold one-on-one relational meetings and house meetings hosted by community residents. The convening agency assembled a steering committee consisting of other local nonprofit organizations to assist with the community engagement effort. Stakeholders had varying perspectives about the efficacy of this process. One longtime community resident was satisfied with the process and believed that it fell into place as envisioned. He felt that the convening agency played an important role in getting the word out and facilitating this deeper level of engagement. He also noted that the process was well structured and this contributed to its success. Other participants in the focus group raised valid points about the depth of engagement. One staff member from a participating nonprofit organization noted that the strategy of engaging community leaders was still "fuzzy" to her, and she raised questions about how many true new community leaders were identified and assumed a meaningful leadership role. Even though it was discussed and envisioned that natural leaders would emerge, in her opinion she felt that the planning process and early action projects were led by only a handful of core citizens.

Building true grassroots participation in a neighborhood populated with refugees and immigrants presented significant obstacles. One nonprofit staff member who was significantly invested in the process noted that from the onset of the project those involved had pure intentions of developing deep levels of resident engagement. While they acknowledged the challenges of working with refugees and immigrants, nonetheless they quickly learned that natural leaders do not necessarily immediately float to the top and become engaged. These populations were not familiar with the

process and therefore the convening agency and LISC realized that it would take longer to educate the community about the process. As this nonprofit partner stated, "we need to break down the barriers of their past," so that we can facilitate their involvement in the planning process. They worked through their established organizations to identify names of people, ultimately compiling a list of 100 names, and then they arranged one-on-one meetings to discuss the strengths and weaknesses of the neighborhood. Even though the Neighborhoods First project continues to move forward, community outreach and engagement is still being pursued. Indeed, it became one of the lead quality of life indicators in the plan itself.

Race and gender also played a critical role in the engagement process. Women were overrepresented in the planning process, largely as a result of cultural and ethnic values that define community work as women's work. One Somali woman noted that in the 3 years she has worked for her nonprofit organization, every resident meeting she has convened has been almost exclusively women. She explained that as a Somali woman, it is culturally unacceptable for her to approach men directly. Therefore, her interactions are limited to women. An African American man who was very involved in the Neighborhoods First process noted that in his experience, it is hard to get men from his community involved in local issues. These are formidable challenges and while the literature on community development is filled with examples of women's valuable contributions, a more representative gender balance in the Neighborhoods First effort would certainly lead to richer outcomes. The Somali staff woman noted that her organization has experimented with strategies to strike this balance deciding, for example, to specifically approach well-respected men from the community and ask them to take the lead on various initiatives. Their involvement pulls in other men and diversifies the participation.

Despite the challenges, focus group participants did note that it was effective to use strategic individuals positioned within existing organizations to draw from their base and bring their specific community into the process. As an example, they pointed to a formal leader of a Vietnamese organization in the neighborhood who was effective in generating interest from the Vietnamese community. Similar to challenges with balanced gender participation, traditionally uninvolved groups require known role models and personal contacts to facilitate their entrée into the process.

Once the community engagement phase was complete, the planning process was initiated. The first critical step involved an envisioning by community participants during a large community meeting in order to identify the quality of life indicators that would drive the planning. The stakeholders interviewed were largely in agreement that this was a relatively smooth process. The planning facilitators asked participants to envision the characteristics of the neighborhood that they would like it to become. This process led to the identification of critical quality of life components. Some residents found it challenging to articulate their concerns, so different tools and techniques were utilized, such as drawing a picture if individuals were unable to come up with the right words. Translators were present, too, to make sure that all residents had equal voices. Ultimately, the neighborhood identified eight quality of life indicators for its focus: community leadership, youth empowerment,

safety, affordable housing, community health, arts and culture, wealth-building strategies, and physical revitalization and place making. Youth and safety were identified immediately and unanimously. The focus group participants explained that these issues are front and center in the community and were agreed upon to be tangible and operational. With the indicators established, the planning process continued for the following 6 months as community members and nonprofit organizations worked in smaller groups to refine a set of programs, policies, and projects to pursue to achieve the quality of life indicator goals. Discussion also focused on employment and transportation challenges, but due to the deep structural challenges inherent in these issues, community participants were concerned that they would not be able to make short-term gains and so these areas are less well represented in the plans.

As the planning process continued, the community identified early action projects to carry out. Again, this was relatively smooth. LISC staff originally anticipated that they would be overwhelmed with proposals, but this was not the case. The community was actually very clear about its expectations and wanted to make sure that the first projects selected were feasible. Early consensus led to the desire to lead off with a project for the community's youth. The community's name derives from the large park that is situated in the neighborhood. Gang activity and insufficient resources to provide enough parks and recreation staff supervision created a space that was deemed unsafe by many residents. The International Rescue Committee, a local nonprofit organization, proposed establishing a soccer league. Bureaucratic hurdles prevented the creation of a formal league in the park, but the community succeeded in organizing Saturday soccer matches at a local school.[3]

Another successful early action project was Colina Park Night Out. Residents participating in the Neighborhoods First effort decided to use Colina Park Night Out as their launch event for neighborhood safety efforts. More than 300 people attended the first annual Colina Park Night Out event in August 2008, participating in a candlelight march around the park to reclaim the space as their own.[4]

These early successes led to a clear sense of accomplishment. Participants in the focus groups also noted that the entire planning and early implementation process created a tighter web and more collaboration between the community's nonprofit organizations. Several participants noted that they now feel more welcome at meetings and feel a greater sense of community enfranchisement. The process to date has clearly had its challenges, but most of the focus group participants would agree that the more formidable challenges lie ahead. Critical to the success of quality of life planning and implementation is a steady stream of revenue and ongoing momentum to drive the process forward beyond the initial early action projects. LISC staff played an invaluable role as the macro facilitator, ensuring that the NFI process

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[3]The story of this early action project is documented in this YouTube documentary: http://www.youtube.com/watch?v=__DDlDq58es8.

[4]For more on this event, see http://legacy.signonsandiego.com/news/metro/20080814-9999-1cz14colina.html.

adhered to the timeline and the convening agency had the support to move forward with its role. Adjustments were made when necessary, but LISC staff kept the process moving forward. One focus group participant notes that City Heights CDC and LISC were the engineers, collecting people and building momentum, but once the early action projects were completed, the effort slowed down. She noted that the community still needs someone to bring them together and hold them accountable so that they maintain their focus. Access to resources will also clearly play a role as the quality of life planning moves forward. The larger City Heights neighborhood is one of 14 communities in the state that was recently selected by the California Endowment to receive funding through its Building Healthy Communities Initiative. Further, a large family foundation, Price Charities, conducts substantial grant making in the area. While neither foundation will be able to fund every viable program in the community, focus group participants acknowledged that they have the potential to leverage resources through these entities. As we discuss in the next section, the funding climate in the other Neighborhoods First pilot neighborhood, Greater Logan Heights, was much different and led to diverging opinions about the viability of strategic quality of life planning.

Case Study: Greater Logan Heights

One of the oldest communities in San Diego, Greater Logan Heights is located adjacent to downtown San Diego and situated on the harbor (see Figs. 1.3 and 1.4). In the nineteenth century it was home to many prosperous businessmen and their families due to its proximity to the central business district. Over the following decades the neighborhood was rezoned several times to allow for industrial use and subsequently the neighborhood became characterized by a mix of incompatible uses in close proximity to one another. The construction of the Coronado Bay Bridge in the 1960s caused massive disruption and displacement as it cut directly through the community. Since Greater Logan Heights is located directly east of the expanding downtown core, many residents are concerned about encroaching gentrification.

Like Colina Park, Greater Logan Heights has a diverse population. The overwhelming majority of the neighborhood is Latino (86%), but African Americans have a history in the neighborhood too, as evidenced by the many African American churches still in use in the community and a population that is 10% African American. This neighborhood of 14,190 residents also has a large foreign-born population (45%). It is an impoverished community with 34% of the households at or below the poverty level and a median income of $22,907 which is 54% less than the city-wide median. Greater Logan Heights is a community of renters as only 28% of the housing units are owner occupied. Overcrowding is a problem as well with 49% of the units in excess of acceptable occupancy rates.

Unlike Colina Park, Greater Logan Heights has a rich infrastructure of grassroots organizations, some of which have been in the neighborhood for many decades. However, limited resources and lack of political capital neighborhood-wide have created distrust and competition between the organizations leaving them without a
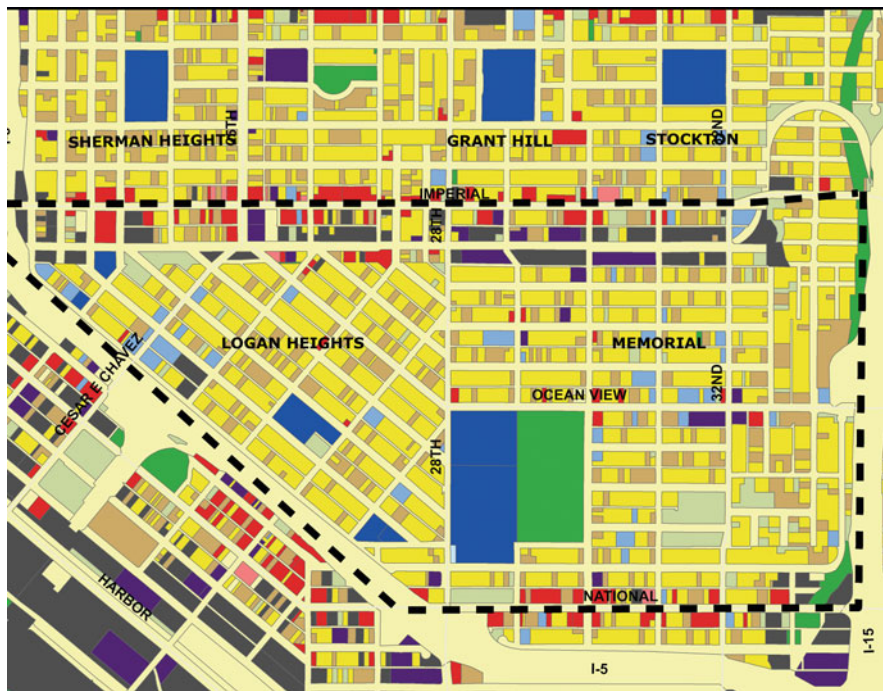
Fig. 1.3 Map of Greater Logan Heights. (Source: San Diego LISC, 2009b)

history of collaboration. This dynamic significantly impacted the Neighborhoods First planning process in this neighborhood.

The Neighborhoods First planning process in Greater Logan Heights was tenuous from the beginning. An established regional nonprofit organization, MAAC Project, was identified as the convening agency. As one of the oldest comprehensive housing and social services agencies in the community, MAAC's 45 years of work in San Diego should have been seen as advantageous. However, the community was in the midst of tension and conflict over a recent situation that caused a rift between some of the grassroots groups. MAAC was seen as aligned with one side of the rift, exacerbating its challenge to function in the convening agency role. While the community is rife with grassroots and community-based organizations and leaders, formal and otherwise, these groups are not known to work in collaboration with each other. Moreover, as a result of historical events, the community tends to be distrustful of "outsiders." And, unlike Colina Park, there are fewer institutional, high-capacity nonprofit organizations operating in this neighborhood. For all of these reasons, LISC staff and the convening agency acknowledged that the community engagement process required a skillful and methodical approach and considerable amount of trust building before the quality of life planning could begin in earnest.
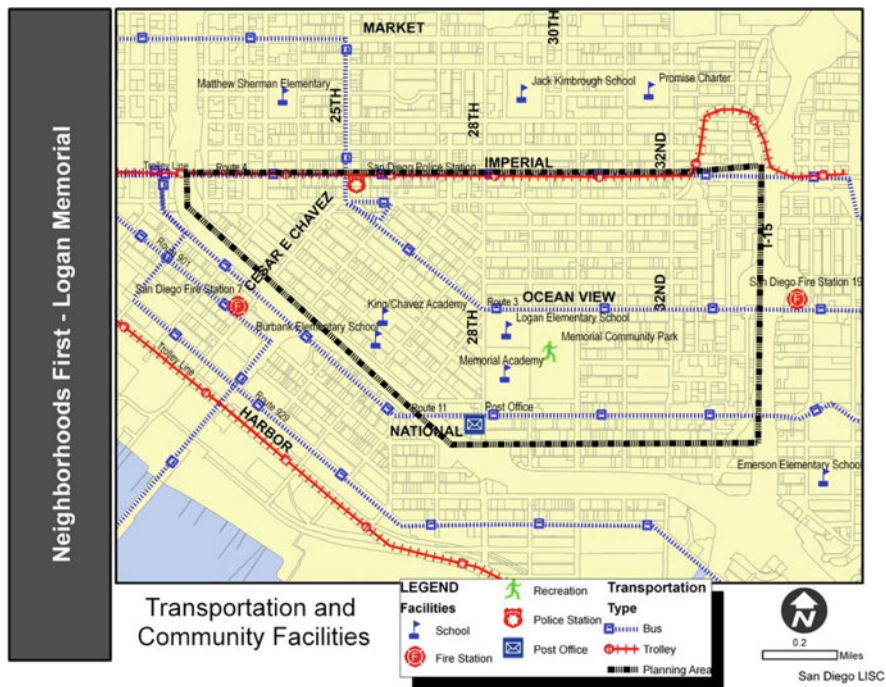
Fig. 1.4 Greater Logan Heights community facilities (Source: SanGIS; San Diego Metropolitan Transit System)

One of the focus group participants, a woman with a long history of working for nonprofit organizations in Greater Logan Heights, explained that her organization was wary when MAAC approached it and requested its participation. She was told that she could attend the meetings, but it was clear that her organization had low expectations. She came to see it as an opportunity to collaborate with other organizations instead of compete with them. Another focus group participant, also a woman with deep ties in the community, was told by her base that they did not want her to work with the LISC Neighborhoods First initiative. Her curiosity led her to follow up with LISC, but speaking for her base she was very clear early on in the process that her community required resources and empowerment.

The visioning process proceeded with caution. Some of the participants risked losing the respect of their base by attending meetings. The fragile history of the neighborhood and the prevalence of distrust and competition required diplomacy. In hindsight, focus group participants who attended the early visioning session and subsequent planning meetings found that the process was invaluable as they not only engaged in fruitful relationship building, but the process itself enlightened them about their own work with their respective organizations.

The earliest visioning sessions were poorly attended. Distrust for MAAC and the LISC initiative served as a significant obstacle to community engagement. However,

a core group of neighborhood activists who were fundamentally driven by their commitment to the well-being of the community took a political leap of faith and tried to engage their core. Two critical actions ultimately worked in their favor. First, they framed the visioning process as a competition over who could have the greatest representation. As in Colina Park, interpersonal relationships in Greater Logan Heights were critical to early engagement. The core activists worked their base, and because the activists were respected, their base turned out. Second, the convening agency decided to provide financial compensation to organizations that took on responsibilities for planning the visioning event, including assisting with outreach. Focus group participants were united in their belief that successful resident engagement derived from these interpersonal relationships, and they noted that the convening role is very important. They questioned the selection of MAAC, yet it is not clear whether there is consensus on what organization could perform the convening agency role with greater effectiveness.

From the visioning process, Greater Logan Heights identified six quality of life indicators for its focus: affordable housing, education, safety, cultural resources, economic stability, and community resources. These indicators were selected during a large community visioning session using the format previously described in the Colina Park section. Participants felt somewhat rushed by the process and the convening agency and LISC staff realized that they needed to slow down the process. This was an important decision, but it should also be noted that the dynamics in the neighborhood were such that LISC's role as macro facilitator was required to propel the process forward. Without LISC, it is likely that the planning effort would have stalled indefinitely regardless of the community's best intentions.

As the community completed its quality of life plan, it also embarked on its early action projects. Resident leadership was a priority for the community, and one of the first early action projects was the "Academia de Liderazgo" (Academy of Leadership). More than 75 community residents developed personal and community leadership skills during a 6-week training program in 2009. During the program, residents reconnected with the community's history while learning skills to become involved in issues that impact their lives and their communities. With the Academia de Liderazgo, Barrios Unidos Hoy Orgnizados, a grassroots organization, developed the capacity of residents to get involved in local, county, state, and federal issues including housing, employment, education, and immigration. This program provided a strong foundation for continued community engagement and involvement.

The three other early action projects included a neighborhood cleanup day, a Green Resources Fair, and a community mural project. Each of these projects was designed to demonstrate tangible progress to the community and build confidence in the initiative. Despite the success of these first projects, focus group participants expressed reservations about the future of the initiative. One participant noted that the visioning process asked participants to think big, and then relatively little happened aside from the early action projects. He expressed reservations about the investment of time noting that it is not worthwhile unless there is something real and tangible at the end. While he was pleased with the implementation of the early action

projects, he wondered about the viability of scaling up the effort and entering into the fourth phase of the project. His wariness was apparent, and it was clear that the local culture of distrust in planning had not been fully assuaged by Neighborhoods First. Based on its history, this is a community that will require continued proof and tangible outcomes as it moves forward with its quality of life planning.

Other focus group participants expressed similar concerns about future implementation. Access to resources is critical to elevate the quality of life process to the next level. Compared to Colina Park and the possibility of resources from the California Endowment and Price Charities, Greater Logan Heights is at a severe disadvantage, although, as some focus group participants commented, resources are available if the community partners are willing to collaborate and innovate to secure external resources. As one participant noted, "I always felt that in these neighborhoods there is a huge opportunity if enough leaders are on the same page with a vision to galvanize the movement and have a shared vision, strategy, and plan."

All focus group participants agreed that while tangible outcomes are still desired, the Neighborhoods First initiative has so far succeeded in facilitating relationship building among the neighborhood's leadership. New relationships have been established, trust is readily apparent, and the desire to collaborate is shared. The next steps in the process are formidable, but the fact that many of the community's respected leaders have a new sense of camaraderie should hopefully lead to positive outcomes as the fourth phase of the quality of life process commences.

Conclusions

The Neighborhoods First initiative in San Diego offers lessons on the challenges and opportunities inherent in community-driven quality of life planning and implementation in low-income urban neighborhoods. We conclude by summarizing best practices as observed in San Diego, although we emphasize that every community has its own unique challenges and political barriers, and so the application of these lessons elsewhere may yield very different outcomes. Regardless, we believe that the best practices from San Diego still have utility in helping other communities identify process-related components that have the potential to yield meaningful change and community support.

Based on internal LISC analysis and focus group conversations, we conclude that community ownership of the process, especially in multiethnic neighborhoods such as the ones discussed in this chapter, is vital to success. Fundamentally, Neighborhoods First is about communities leading the planning and implementation processes. Community ownership, however, is a complex concept. Most neighborhoods have well-known dynamic leaders who are highly visible. With Neighborhoods First, both Colina Park and Greater Logan Heights were required to cast the net wide and deep in order to identify nontraditional leaders. These emerging leaders bring untapped knowledge along with crucial connections to their base communities. Multiethnic communities often have their own leadership clusters, and enfranchisement of these disparate groups expanded participation.

In both neighborhoods we learned that residents often respond best to requests from individuals who share their cultural, racial, and/or ethnic affiliation.

Broad levels of community engagement serve to expand feelings of community ownership of the process, but Neighborhoods First demonstrates that participation in the process is not enough to sustain momentum. In both Colina Park and Greater Logan Heights immediate outcomes not only energized the process and furthered momentum, but they enhanced community ownership and the motivation to pursue the effort even further. This tangible connection between visioning, developing quality of life plans, and acting on these plans promoted feelings of accomplishment and success. This support for the process was further enhanced by broad transparency. Not only did LISC staff and the convening agencies discuss and explain the goals, objectives, and process of Neighborhoods First, but placing the community in control led to openness and inclusivity, essential hallmarks of transparency.

The early action projects succeeded not only because they linked planning with action, but they required community stakeholders to demonstrate their own ownership of the plan. The efficacy of small-scale efforts like these was demonstrated in both Colina Park and Logan Heights. The more daunting challenge, however, comes next as the two neighborhoods enter into the fourth and longest stage of the quality of life process. This last phase involves implementation of the complete quality of life plan. The relationship building and community engagement that was developed in the early phases has established a strong foundation for moving forward, but long-term engagement will be challenging to sustain. The community stakeholders we met are acutely aware of the hurdles that lie ahead, specifically with respect to sustained access to sufficient financial resources. Low-income communities such as these require deep investments in their physical, cultural, and economic infrastructure. The Colina Park community has reason for cautious optimism based on the presence of two large foundations that have demonstrated their commitment to current and future support. However, foundations are not the panacea. We learned from residents in Greater Logan Heights that foundations are perceived as problematic if they enter communities with their own agenda and neglect to involve the community in programmatic and resource-allocation decision making.

We also observed that despite the stakeholders' desire to move beyond processes and enter the implementation stage, community groups often resist strict deadlines and timelines. In Greater Logan Heights in particular, the community pushed back against LISC's deadlines. LISC staff responded with flexibility, yet ultimately they ensured that the process moved forward more or less according to plan. This is where the role of the outside macro facilitator becomes crucial. It is highly likely that in the absence of LISC, the process would have stalled. As a neutral third party, the facilitator is able to gently push forward without being questioned about the larger agenda. LISC staff will continue to play an invaluable role in the fourth phase of Neighborhoods First.

All of the factors discussed above enabled Neighborhoods First to realize tangible accomplishments. Underlying these positive outcomes was widespread recognition at the initiative's inception that the unique qualities and histories of each neighborhood needed to be respected and understood. Placing the neighborhood and

its many different micro communities (defined by race, ethnicity, refugee, and/or immigration status) in the lead facilitated this. With flexibility built into the process to adjust to unforeseen situations, such as Colina Park's obstacles with the recruitment of emerging leaders, this unique attribute of Colina Park was handled with sensitivity and respect.

As national LISC and other community development organizations and funders continue to emphasize investment in holistic and comprehensive community development, it is likely that efforts similar to Neighborhoods First will take root in neighborhoods across the country. Several Chicago neighborhoods, for example, in partnership with LISC have already achieved considerable success in this area. The Neighborhoods First quality of life planning initiative in San Diego offers best practices to inform the work of practitioners, policy makers, and community residents embarking on similar efforts in low-income communities across the country.

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Select Online Resources Pertaining to Neighborhoods First

Neighborhoods First: A Roadmap to a Better Future (Documentary)
http://www.youtube.com/watch?v=yZoRP1StRvQ
Un Vivienda Digna (Documentary)
http://www.mediaartscenter.org/site/apps/nlnet/content2.aspx?c=dfLIJPOvHoE&b=5287931&ct=7168789

Un Vivienda Digna (Student Reflections)
http://www.blip.tv/file/2240708/
http://www.blip.tv/file/2240708/
http://blip.tv/file/2240626
Neighbors: Digital Stories of Community Building (available on our YouTube playlist – below)
http://www.youtube.com/view_play_list?p=9AFD41F23500406F.
Stories of Colina Park:
www.storiesofcolinapark.org

Chapter 2
Developing and Sustaining a Community Information System for Central Indiana: SAVI as a Case Study

David J. Bodenhamer, James T. Colbert, Karen Frederickson Comer, and Sharon M. Kandris

Abstract SAVI is one of the nation's largest community information systems containing over 10,000 indicators of quality of life. This chapter describes the history and development of its robust data processing system, its interactive web application that allows users to analyze and visualize the indicators, the governance and funding structures, and the cultivation of the user community and support mechanisms. It highlights various uses of the system by a wide range of user groups. Finally, it shares the lessons SAVI learned during its 15-year history and outlines the recommended steps for a community to develop its own community information system.

In late spring 1994 civic and neighborhood leaders gathered at United Way headquarters in Indianapolis to continue work on a community-based assessment strategy. It was another in a long series of meetings, all designed to create indicators to guide the allocation of philanthropic dollars toward the city's most pressing problems. The process had been frustrating and wearying for staff and volunteers alike. Consultants had mined the available data and created reams of charts, graphs, and tables, which always seemed to be in disarray as participants shuffled papers in a futile attempt to compare neighborhoods or find correlations among indicators. To their dismay, they too often discovered incomplete or misleading data.

But this meeting would prove to be dramatically different. Using Geographic Information Systems (GIS) technology, the Polis Center, an applied research unit at Indiana University-Purdue University Indianapolis (IUPUI), had created a dynamic and scalable mapping environment to manage and display the data that so often overwhelmed the participants. Called SAVI (for Social Assets and Vulnerabilities Indicators), this nascent community information system integrated multiple data sets within a set of common geographies, from county and township to neighborhood and census tract, and visualized them on a map. Suddenly the participants saw their city and its parts as a common space. They noticed at a glance the proximity of

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their separate communities to the whole and to other areas. They spotted with ease the patterns of social problems and the availability of community assets – a health clinic, a social service agency, a faith-based organization – to address their concerns.

One of the most pressing social issues in the early 1990s centered on a spike in the number of infant deaths, for which Indianapolis had launched a comprehensive, community-wide, well-baby initiative. A SAVI map revealed the geography of the problem. Not surprisingly, it corresponded closely to the city's poorest neighborhoods and revealed the absence of human service programs in these areas. Comparing the available services with the city's bus routes also revealed how difficult it was for residents to use public transportation to travel to existing clinics. In some instances, mothers of newborns had to travel well over an hour to reach a service. It quickly became apparent that one solution to the problem was providing more easily accessible services to people in need.

Equally interesting was another response: the map evoked memories and observations to explain why this neighborhood or that place had the character ascribed to it. "I grew up in Martindale-Brightwood," one participant noted, as he looked at a map that showed the former working-class neighborhoods to be sites of high crime, poverty, and low educational attainment. "What you are looking at is the result of the interstates that ripped the heart from these communities in the 1960s. I can't tell you how many families, including mine, were forced to abandon our homes and how many small businesses closed. No wonder this neighborhood is in crisis; it was wrecked a long time ago." Another person found the city's history of unofficial red-lining contained on the map. "Brightwood was a predominately white community within my lifetime," she recalled, "but now it is all black – and that's because whites could move to the suburbs but blacks couldn't." Someone else saw that the map failed to identify the strongest institutions in the neighborhood, its numerous small churches. "These places have always been the heart of this area," he noted, recounting story after story of interventions and encounters that had changed lives. "If this area can be rebuilt," he continued, "it will begin in these places." The interactive map had invited participants to craft a richly detailed sociology of an inner-city community, informed by the data but made compelling by the complex layering of memory and history (Bodenhamer, 2008).

This story, an illustrative amalgam of several occasions, was not unusual, nor was it unique to Indianapolis. Cities across the nation were using the power of GIS to explore data in new ways, often with the same sort of participatory citizen response noted in Indiana's capital. By the first decade of the twenty-first century, these community information systems existed in over 30 cities. At the request of Congress, the Government Accountability Office in 2005 surveyed the systems and identified how they might address the nation's information needs (GAO, 2005). These systems served different purposes – the SAVI Community Information System had a comprehensive mission while most systems focused on health, education, or housing, among other topics – but almost all used GIS as a core technology and invited interaction with their data and mapping. They fit within what is known as participatory GIS (PGIS), an approach to computer-based mapping that seeks to involve non-experts in the interpretation of expert data (Weiner, Harris, & Craig, 2002).

SAVI fully embraced this approach in its origin, and it remains committed to active community involvement in the development and meaning of its indicators.

This chapter presents a historical overview of SAVI's development, describes its current configuration and initiatives, shares lessons learned during its 15-year history, and provides recommendations on how to get started developing a community information system.

Development of SAVI: A Historical Overview

SAVI used a formal requirements development process, the Volere method, to identify both its intended functions and its community indicators. The initial design, from the mid-1990s, included features and data of most interest to community service agencies, such as United Way. Stakeholders and funders wanted a sustainable system that would allow continual updating of data capable of being mapped at a variety of scales and easily accessible to users, originally analysts in community-based organizations. It also was important for the system to cover the Indianapolis MSA, then a 9-county region (now 11 counties) with over 1.5 million residents. Based on these requirements, which guided the system's design, The Polis Center (Polis) at IUPUI chose MapInfo for the GIS and Microsoft Access for the database. Three types of data formed the core of the first system: vulnerabilities, or administrative data from federal, state, and local providers that measured social problems or needs; asset data, or information about the availability of organizations, programs, and services with capacity to address these needs; and geographic data, the map layers required to identify and display the location of the data.

Seven categories of vulnerabilities data formed the initial core of the system: population from the US Census; welfare from the State of Indiana's Family and Social Service Administration; education from the State Department of Education; crime from the Indianapolis Police Department; juvenile crime from juvenile justice agencies; housing from the City of Indianapolis; and vital statistics (births and deaths) from county health departments. Asset data on schools, clinics, community-based organizations, human service agencies, and faith-based organizations, among others, were obtained from a variety of sources, including but not limited to state sources, Information Referral Network (now Connect2Help), a Central Indiana help line, and the Indianapolis Center for Congregations, which maintained a roster of all churches, synagogues, and mosques. Map data also came from a variety of sources including the Indianapolis Mapping and Geographic Infrastructure System and various commercial providers.

From the beginning, Polis sought to collect address-level data whenever possible in order to ensure the greatest flexibility in its use. Without this granularity, it would have not been possible to link data geographically across categories or to analyze it effectively at multiple scales. Polis was able to acquire these data in most instances, primarily because it demonstrated appropriate ways to safeguard the confidentiality of sensitive information. For example, it provided agencies with

routines to strip personally identifying data and mine the attributes before bringing attributes (e.g., age, race) and addresses together in a final, machine-only process. Its memoranda with data providers included oversight provisions, guarantees of confidentiality, a scheme for routine renewal of the agreement, protocols for making new data requests, and a schedule for the regular collection of data.

In its initial assessment, Polis concluded that the Internet in the mid-1990s was not yet mature enough to support online mapping to the degree required for complex data sets capable of analysis at highly granular levels. Also, most users, and especially many community-based organizations, did not have sufficient bandwidth to make Web-based dissemination practical. In response, the center developed a series of over 50 access points across the metropolitan area, usually in libraries and human service organizations. The expectation was that these institutions would provide not only public access but also user support, including help with analysis of the data. To support this expectation, Polis developed a detailed data user's guide and created a series of free, regularly offered training modules in the hope that these sessions would relieve the center of the need to manage a staffed support service.

Circumstances and experiences soon changed these plans. By 1999, the center believed the Internet was the future for community information systems, and it secured a US Department of Commerce grant to allow the migration of SAVI to the Web. The robust Oracle relational database management system now anchored the system architecture, with Arc/INFO and ArcSDE serving as the geoprocessing engines. Polis partnered with ESRI St. Louis to develop custom applications using the recently released MapObjects software to provide interactive, online mapping and querying. In fact, SAVI was one of the first community information systems to exist on the Web and was widely recognized for adding online mapping to the community tool chest. In 1999, the year immediately after the publication of the first "SAVI-Interactive" website, ESRI released its ArcGIS suite of software with a single integrated architecture that significantly enhanced the center's ability to expand the system's online functionality. Polis considered open-source solutions during this period but chose to remain with proprietary software because of its stability and user support. A cost-benefit analysis suggested that money saved with an open-source solution would soon be consumed by the time required to manage systems not yet mature enough to meet the processing and display demands of SAVI. Even with proprietary solutions, however, the Polis staff had to engineer solutions not provided with the available software products (Fig. 2.1).

One disappointment (and still a frustration) was the inability of data providers to participate in a truly distributed system, now known as a Web services environment, because of legacy data systems and too many administrative demands on their IT staff. Polis responded by working closely with providers to help them accommodate new technologies as they became available. SAVI analysts also developed close relationships with providers and offered feedback on problems with the data (and many such problems existed because of inadequate internal controls) that allowed agencies to improve their own data sets. This collaborative posture has been instrumental in cementing the close relationships necessary to surmount the obstacles that inevitably occur in data-sharing agreements.
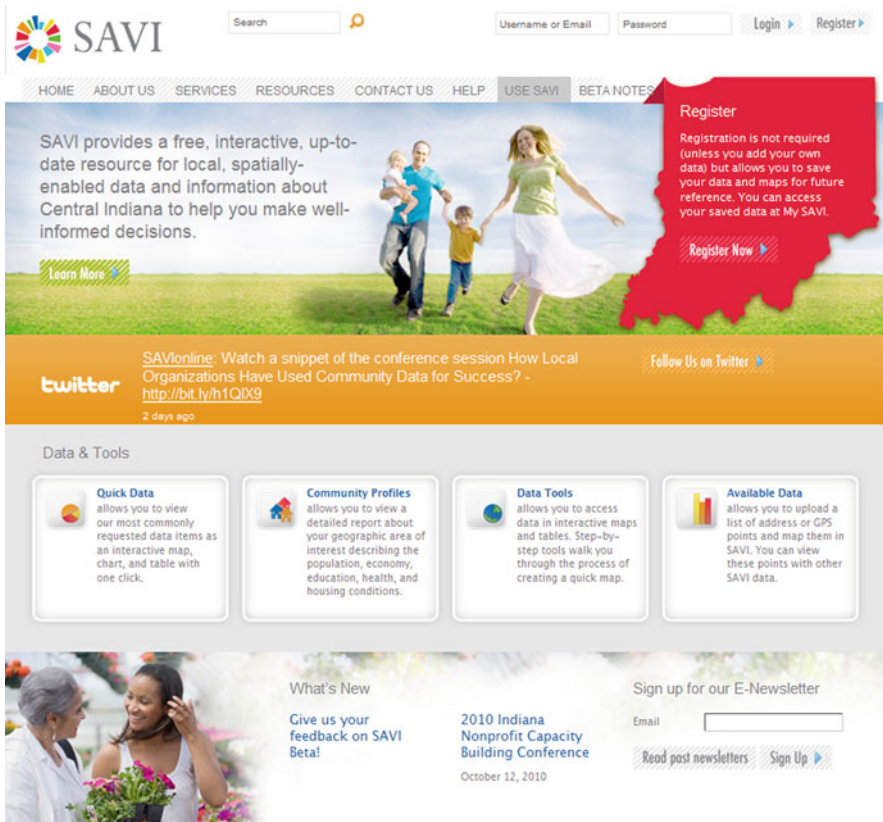
Fig. 2.1 Home page for SAVI Community Information System (www.savi.org)

Two other federal grants, a second from Commerce and one from the US Department of Education, allowed Polis to expand SAVI and reposition it as a more robust service for a larger and more varied number of community-based organizations. Additional outcomes included a broader range of training options and outreach to K-12 audiences. Polis also enhanced SAVI's geocoding service to a match rate up to 95% on first-pass processing; concurrently, it further automated many of the data processing routines, developed a largely machine-driven quality assurance process, provided an easy means of downloading data, and created new ways to search and display data.

In the first decade of the twenty-first century, SAVI evolved into a true community information system, with features that made its data and tools more user-friendly and therefore more accessible. Among key developments were automated graphing and charting functions that allowed users to view data in multiple ways, including as time series, and took advantage of data sets that covered two decades (1990–2010) of administrative records. It reported data tagged by 10 or more geographies from census block groups and tracts, neighborhood boundaries

and ZIP codes, political jurisdictions, and school districts, among others. It also allowed users to draw their own boundaries for areas of unique interest, e.g., catchment areas for CBOs, and have the data reported in either standard or custom geographies. Other features included the upload of user-generated data to map within SAVI, dedicated space for registered users to save their data and analyses, and the ability to generate professional-quality maps. In brief, SAVI users could upload their own address or GPS data to the system and view these points, along with text, photos, and additional data if they chose, on the map.

Recognizing that many users simply wanted a quick way to gain information on their communities or service areas, SAVI created over 2,000 community profiles, one for each census block group, census tract, neighborhood, school corporation, and county (Fig. 2.2). These profiles include histories (if available), access to over 270 of the most commonly requested demographic and vulnerability information, and maps and charts, all formatted for quick printing. More important, the various elements were linked to the database so that each time SAVI processed new data, it automatically updated the profiles. These community profiles, therefore, provided users with a quick and easy way to view statistics and information for a particular geographic area of interest. It was an easy way for new SAVI users to get started.

The vast amount of community data within SAVI made the system increasingly attractive to users far beyond the human service agencies originally conceived as the
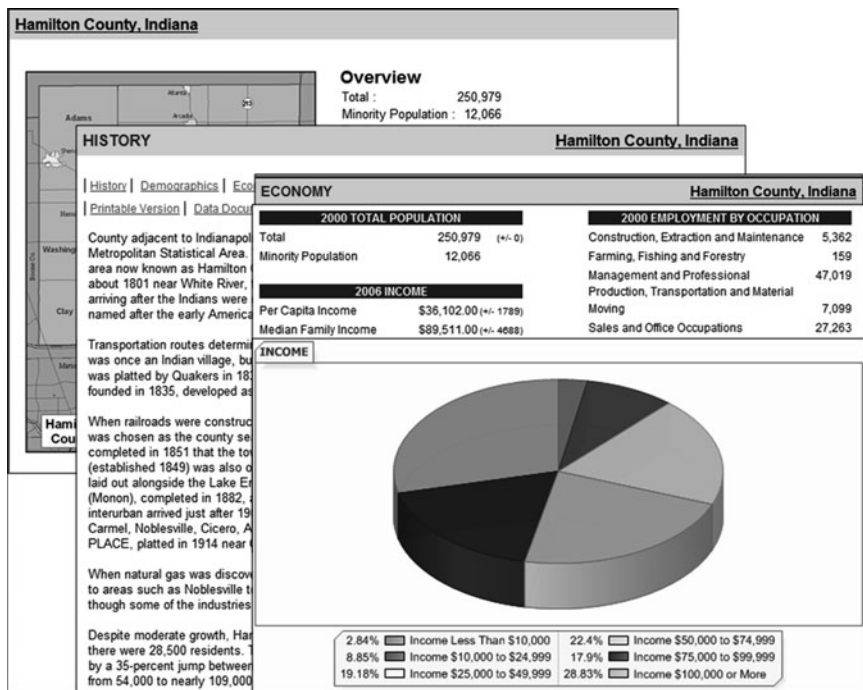
Fig. 2.2 An example of SAVI community profiles
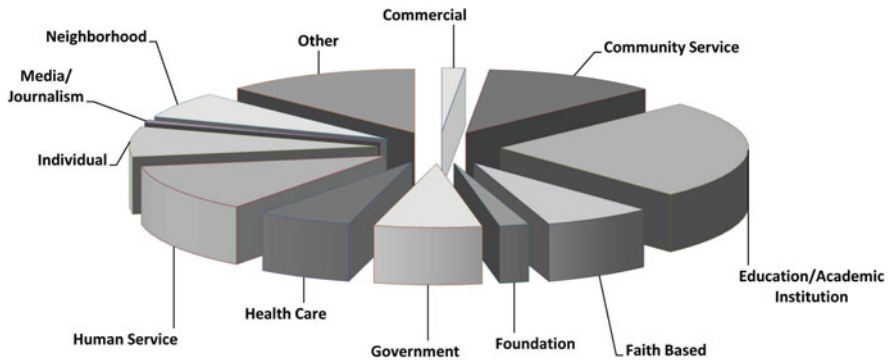
Fig. 2.3 Known affiliations of registered users: 1,996 registered users as of March 31, 2010

primary audience. Virtually every sector in the Indianapolis MSA was represented among registered users (Fig. 2.3). An annual SAVI Users Conference, begun in 2005, drew in excess of 200 participants. By 2009, the SAVI website registered over 1 million hits annually, with an average of 385 visits per day.

Over its two decades, a core group of technical experts has joined with data and GIS analysts to form a SAVI team of approximately 4.25 FTE. Polis operates as a matrix organization, and all of its staff work on multiple projects, an arrangement that enhances innovation because development in one project often can be used effectively in another project (Fig. 2.4). Included in the team are a systems engineer, database administrator, programmers, Web developer, GIS analysts, trainers, and
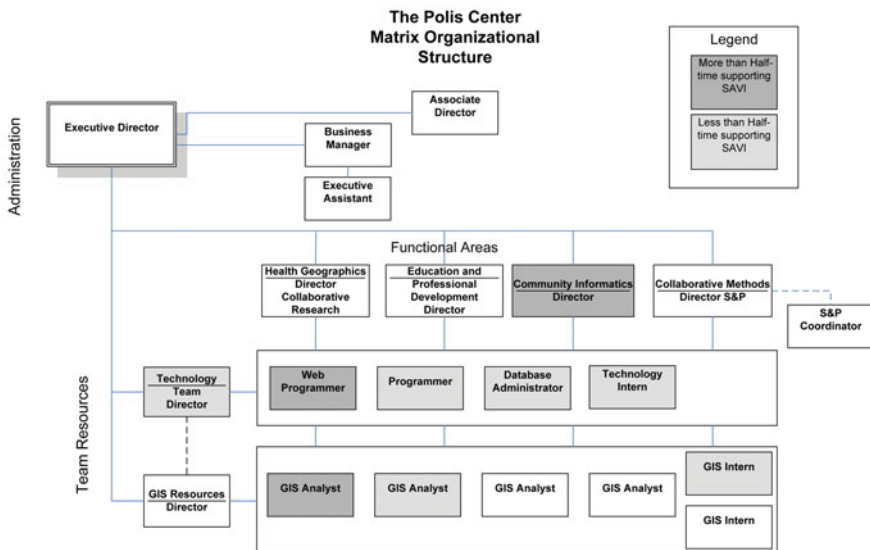
Fig. 2.4 The Polis Center's matrix organizational structure

project manager. The SAVI team also collaborates with external analysts and content experts to ensure the appropriateness and integrity of the data.

System Design

Data Processing

SAVI has developed a highly automated, modular, and scalable system for processing and managing the thousands of records it receives and maintains each year (Fig. 2.5). Three key principles governed the development of the system: (1) Data integrity and reliability is paramount. Users rely on the data for important decisions, often involving major commitments of money and time. (2) Efficiency and security require that as many processes as possible be automated, with careful and complete documentation of all procedures and data elements. Human intervention in processing too often produces errors that are costly and time consuming to correct. (3) The system must be capable of migrating efficiently to new platforms as technology evolves. Legacy systems ultimately become too costly to maintain and are inappropriate for community information systems that must generate financial support annually.

Data Import

SAVI's data processing is based on an Oracle enterprise RDMS with several other modular components that interact with the database. The system is capable of receiving data from the source provider in any of several different data formats
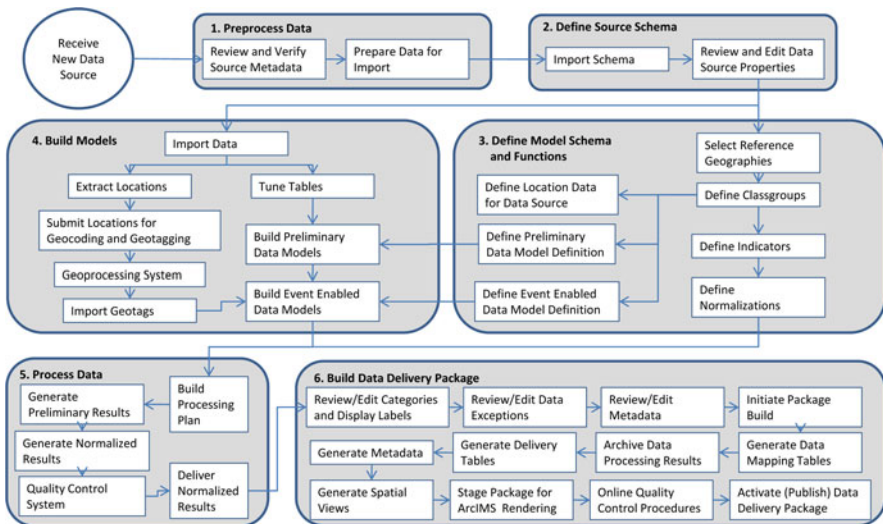
Fig. 2.5 SAVI data processing system

including but not limited to CSV, MS Access, SAS, and plain text files. When possible, SAVI staff work with the data provider to establish a format that is reliable, accurate, and consistent from delivery to delivery. This approach works best with organizations (e.g., Marion County Health Department) that are familiar with the SAVI system and even may make use of it themselves or refer others to it in their search for information on local communities. These organizations often provide comprehensive record-level databases on a regularly scheduled basis after working with SAVI to develop a data delivery template. National and state data providers, on the other hand, publish data in whatever format works best for them; as a result, SAVI staff must transform data into a useful format. This process requires a one-time development of procedures to handle the conversion, after which the consistency of federal data formats allows SAVI staff to develop automated routines to handle format conversions quickly and accurately.

Regardless of the source, the goal is to prepare the data and metadata for import into the system database. Preprocessing steps vary widely across data sets and are determined by the general state of the source data. Optimally, the data are received in a predefined format ready for the automated processes. An example of this is Uniform Crime Report data that can be input into the system with almost no effort. Some data, however, need to be greatly modified before they can be used; state education data typically requires significant manipulation before they can be used effectively. As a general rule, SAVI makes every effort to place the data into the system unchanged. When changes are required, they must be documented and reproducible.

Defining Indicators

By 2009, SAVI reported over 10,000 indicators in its 432 data categories. The process of indicator development is time consuming and involves consultation with user groups and domain experts. When developing health data, for instance, SAVI staff worked with state and local health departments and with health researchers to define desired indicators, identify appropriate data elements, and select normalizations (e.g., incidents per thousand population or per geographical unit), among other rule-based decisions required for efficient processing.

For each data source, SAVI maintains an indicator template that stores all indicator definitions. These definitions, derived with the help of domain experts, include several elements that collectively represent two basic concepts – how an indicator is calculated and how it is displayed. Criteria for each indicator control how the value is calculated. Using this method, SAVI creates many different indicators based on any combination of database columns, depending on the interest of different groups of users. Continual monitoring of usage statistics and periodic consultations with domain experts result in modified or new indicators in the system. SAVI also develops several different labels for each indicator it develops, including long, medium, and short descriptions that are used in different places on the website depending on how much display space is available.

Data Delivery

SAVI seamlessly presents data to the users through indicator categories such as "demographics," "economy," "health," or "public safety," rather than by data source (e.g., US Census Bureau) or source record type (e.g., birth certificates). The user does not need to be familiar with the source from which the data come but instead can select a category of interest such as demographics. Metadata (described below) alert the user to the data source.

Data Search

SAVI provides multiple avenues for users to search for and locate data. The simplest way is SAVI's Quick Data Select feature. A user can choose from a list of the 10 most commonly selected indicators within each main category. SAVI also provides an Advanced Data Search feature with category and keyword options that allow users to browse all of the indicators within SAVI. The "category search" option provides an interface for selecting from a categorized list of all indicators. The category structure is hierarchical and contains up to four levels. For example, the item "African American Population Age 65 and Older" would be found in this classification: Demographics – Race/Ethnicity – African American – Seniors. Users also can use a "keyword search" option to find indicators by typing a word or phrase. See Fig. 2.6 for an example.

Whenever possible, SAVI presents the data in a way that is most meaningful and less likely to result in misinterpretation of the data. Once a user finds the data he/she is looking for, he/she can choose from several display options, including standard counts and derivatives such as per square mile or rate per 1,000 population. SAVI defaults to the most appropriate display type for each indicator. For example, when a user selects Hispanic Population, the indicator appears as a percent of total population unless the user changes the display option.

Margins of Error

Data providers are increasingly publishing data sets that include margins of error, a measure of accuracy of the data, along with the data values. The most notable example is American Community Survey (ACS) data; other examples include the Census Bureau's Small Area Health Insurance Estimates and Primary Care Service Area Data from the Dartmouth Institute for Health Policy and Clinical Practice. Margins of error are important information for community information systems, but many indicator systems do not report them. This issue will become more prominent for communities in the coming years when 2010 Census data are released without the long form figures for income, education, and employment that were available in previous decennial counts. The magnitude of margins of error associated with block group and tract-level data will make some data irrelevant or misleading, and

Search By Category ⓘ

⊞ **Arts, Culture and Recreation**
⊟ **Demographics**
   ⊞ **Age**
   ⊞ **Gender**
   ⊞ **Group Quarters**
   ⊞ **Households**
   ⊞ **Language Proficiency**
   ⊞ **Marital Status**
   ⊞ **Place of Birth**
   ⊟ **Race/Ethnicity**
      ⊟ **African American**
         ⊞ **Adults**
         ⊞ **Children**
         ⊟ **Seniors**
            ☐ African American Population Age 62 and Over
            ☐ African American Population Age 62 to 64
            ☐ African American Population Age 65 and Over
            ☐ African American Population Age 65 to 66
            ☐ African American Population Age 65 to 74
            ☐ African American Population Age 67 to 69
            ☐ African American Population Age 70 to 74

Fig. 2.6 An example of SAVI's hierarchical data structure

complex calculations are required when users aggregate ACS data elements and geographies to get the information they desire. SAVI preserves margins of error from all data sources that provide them and derives a margin of error for indicators calculated within SAVI.

Metadata

Ensuring that users fully understand the limitations and potential pitfalls associated with data is critical to avoiding misinterpretations. It is also important to give proper credit to the source providers. For each published data set, SAVI's metadata system provides information about the source data, including source provider contact information and any limitations of the source data set or its SAVI processing. In addition to metadata at the data set level, SAVI also has developed and provides metadata relevant to the development of specific indicators, for example, when data suppression has been applied to address confidentiality issues.

Mapping

Users can create and save custom maps from any data in the SAVI library including asset points, such as the location of youth programs and food pantries, and summary-level data for defined geographic units, such as poverty rates or total population for census block groups or neighborhoods. Any number of asset point layers can be mapped at a time with the only limitation being map legibility. Two summary-level indicator layers can be mapped in combination, with one layer shown as a range-filled map and the second represented by points graduated by size and color. Users can modify maps by changing colors, point sizes, and line thicknesses. Maps can be printed with user-defined titles and subtitles; generated maps also can be exported or e-mailed as an image file for ready insertion into reports or grant applications.

Users can upload and map their own data within SAVI. Currently only point data may be uploaded, either as a list of street addresses in text file format or waypoints downloaded from a GPS receiver. With either type of point data, users can create custom fields within their data set and attach photographs to individual points, then access that information within SAVI. In 2011, SAVI will add functionality to allow users to upload their own shapefiles for overlay with SAVI data.

Graphing and Charting

SAVI provides users the ability to make pie and bar charts. Pie charts are created by selecting data from a predefined set of categories, such as age, marital status, housing value. Users are limited to predefined categories because a pie chart must be a collection of components that make a logical whole, such as a pie chart of all different races or marital statuses. The charting tool also allows users to select and compare multiple geographic areas, which can be displayed either as a different pie chart for each geographic area or as a single pie chart representing the chosen areas as a whole. This same comparative display function is supported for time-series data.

The bar chart tool provides users a flexible environment for graphing any indicator in the SAVI library. A wizard guides users through multiple steps, including selection of a bar chart type, geographic areas, indicators, and data years. Users can create bar and line charts that show time series for single or multiple geographic areas and for single or multiple indicators. Generally the most useful aspect of bar charts is the ability to show trends over time, which meshes well with a critical strength of the SAVI library, namely, the preservation of previous years of data whenever possible.

Quality Control

Good quality control procedures are vital to developing a reliable and sustainable community information system. SAVI has implemented several steps to ensure the

accuracy and integrity of data counts and transformations throughout the processing and publishing system. Analysts work with providers to understand and document any data format or coding changes that have occurred since the last delivery. At the time of data import they enter the number of records in the source data as reported by the source provider, and the system compares this count to the number of records it successfully imports. Any discrepancy must be addressed before processing can continue. SAVI uses frequency analysis to compare different data collections within a single source for evidence of changing data trends, which may signal either a change in events, of interest to community analysts, or a processing error, of concern to SAVI programmers. For record-level source data sets with data fields populated with coded values, the system stores the valid values for each data field and compares it to imported values to identify corrupt data or new provider codes. Additionally, SAVI counts the frequency of occurrence of each value to identify if certain codes are suddenly being used more or less frequently, which may indicate a meaningful change on the part of the source provider. A parallel system recreates these quality analyses in the SAS statistical software package and compares results to Oracle-generated tabulations. These processes collectively validate SAVI's ability to produce accurate and repeatable results.

SAVI staff also performs outlier analysis, compares the output to external data sources, and implements logic and consistency quality control procedures. The outlier analysis is performed on the final data tables and compares all years of each individual indicator. Where spikes or precipitous drops in value are identified, analysts examine the data to determine if there is a data quality issue or if a real trend is occurring. Figure 2.7 shows an example of an indicator that suddenly spiked in 2008 for upper-income applicants of guaranteed home loans in the Indianapolis-Carmel MSA. Further examination revealed the spike as part of a real trend.
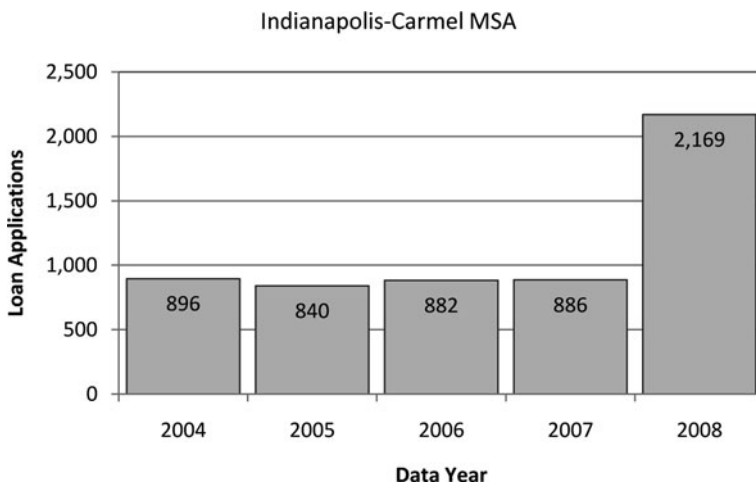
Fig. 2.7 Upper-income applicants (over 120% of median family income): guaranteed home purchase loan applications

One of the most effective quality control methods is the comparison of SAVI data to data published by the provider. Analysts compare a subset of indicators produced by SAVI to the output of systems published by the data provider (e.g., the US Census Bureau's American FactFinder website). This comparison gives a high degree of confidence in our data and is very effective at guarding against logical errors that can occur during the indicator criteria definition step.

A final method of quality control is logic and consistency, in which SAVI staff compares new data releases to previous releases to identify any issues that may be evident. Done manually, this step requires the analyst to examine maps or tables created from new data collections to the similar maps and tables output from previous tabulations. While similar to the automated outlier analysis process, the comparisons at times reveal issues more readily detected by an analyst.

User Testing

Formal user testing of the graphical user interface (GUI) is a critical step in website development. It ensures the allocation of system development resources and achieves desired usability. User testing includes participants from many different levels of experience, from individuals who frequently use community information systems to those who may have never used one but have an interest in community data. Prior to testing sessions, the development team states a clear list of goals and identifies features to be tested. SAVI testing scripts generally involve some sort of role playing where staff asks participants to imagine that they are a part of a community organization, government agency, library, or other known user types and asks them to complete a specific task or find a certain piece of data. Participants "think out loud" as they complete their task and identify whether they are satisfied with the interface or confused and would prefer a different approach. SAVI staff records comments for detailed analysis of which interface elements work and which elements need to be improved or redesigned.

Training and User Support

Training

SAVI is a complex, comprehensive system designed to provide users at all levels, from beginner to expert, with data and functional capabilities that serve their multiple interests. Even though user testing has helped to make the system as navigable as possible for typical users, SAVI early began a training program to ensure that any interested user is able to get maximum benefit from its tools. The goal of this education program is to build the capacity of individuals and local organizations to use information effectively, as well as to increase awareness of SAVI and its potential uses.

Table 1 SAVI education course listing

Level	Title	Length (h)
Executive overview	Executive summary	1
1	How to use the SAVI Website	4
2	Webinar: custom communities	1
2	Webinar: charts and graphs	1
2	Webinar: map your own data	1
3	Basic analysis techniques	2
4	Using SAVI to support grant applications	2
4	Using SAVI to support community assessment	2
4	Using SAVI to support strategic planning	2
4	Using SAVI to support program planning	2
5	Advanced spatial analysis tools for community planning	2
5	Google earth and google maps for nonprofits	2

From its early emphasis on basic tasks, such as how to access and map the data, SAVI has developed a series of topic-oriented and tool-oriented workshops tailored to help organizations and researchers use the website to answer their specific questions (see Table 1). The training program also includes a certification program designed to increase the number of individuals with capacity to use local information effectively. These certified users are the foundation of what SAVI intends to become an active resource that builds community capacity and lessens demands on system staff. Introductions to SAVI as a community information system continue to be a regular part of the training program, but now an abbreviated version of the introductory course is taught by librarians throughout the Indianapolis-Marion County Public Library (IMCPL) system. The relationship with IMCPL is beneficial in two other ways: the library offers training facilities that are more accessible to community residents; and SAVI now is an approved provider of Library Education Units (LEUs), which librarians are required to earn each year.

The training program begins with a 4-hour introductory class that serves as a prerequisite for all higher-level courses. This class provides step-by-step instructions on how to use SAVI's tools for exploring communities, including searching for and retrieving data and viewing and analyzing the data in interactive maps, charts, and tables. This course also explores potential uses of SAVI, including examples of how SAVI is being used by organizations in Central Indiana. But a single course is not sufficient to explore every tool in detail, so SAVI instituted a series of 1-h webinars to teach students how to use some of the more complex tools in SAVI. Future webinars will be recorded for on-demand viewing.

Beyond the ability to use the system, SAVI discovered that many users needed help to understand and interpret the retrieved data. Higher-level classes now teach users how to use data responsibly by introducing basic concepts and considerations when analyzing data, including understanding data limitations, appropriate uses of data, and making meaning out of data. Students learn how to interpret maps and charts, how to select the appropriate data parameters, and how to analyze change

over time. This course provides an important foundation in using and understanding data that are necessary for the higher-level, topic-based workshops.

Topic-based workshops provide applied examples of how SAVI benefits organizations. These workshops are developed and often team-taught with local subject-area experts. For example, the module, "Using SAVI to Support Grant Applications," is taught by the Director of the Nonprofit Training Center of the United Way of Central Indiana (UWCI). Other courses show users how to access non-SAVI tools to manage and visualize their data. In one session, for instance, participants learn how to use Google Earth and other Internet tools to map their own data for purposes of raising awareness, educating target audiences, supporting advocacy efforts, and more. SAVI also has implemented functionality that allows all of the point service data (e.g., youth programs, community centers, etc.,) to be viewed in Google Earth, which can provide impressive visualizations in a widely known geographic application.

User Support

SAVI provides several levels of support. Users often have questions specific to certain data sets or tools or are perhaps unable to attend regularly scheduled training. To fulfill this need, SAVI provides online help topics. These help files are set up as tutorials and provide examples of how to accomplish specific tasks. SAVI also provides one-on-one technical assistance to users who need help using a particular tool or have questions about the data or its limitations. Analytical support is provided to those who need help interpreting data or results, determining the appropriate data to use in a particular case, or thinking through the appropriate analysis or display methods.

Funding and Governance

Funding

From its inception, SAVI has received funding from a variety of sources, including government, philanthropies, and human service agencies. Initially, a local philanthropy, Lilly Endowment Inc., funded most of the developmental and operational costs of the system, but within 5 years it signaled its intention to support only a portion of future operating costs. In response, Polis began to identify grants to help with the necessary technology upgrades and migrations that would keep the system robust and efficient. This strategy resulted in two grants from the US Department of Commerce and one from the US Department of Education; the first commerce grant allowed SAVI to move to the Web and the second expanded its services to new communities, while the education grant funded an expansion of training and user support services, especially for K-12 instruction.

Fig. 2.8 SAVI consulting activity

Operational funding comes from a variety of sources, including local government, community foundations and other philanthropies, universities, and United Way, which also serves as community trustee to assure other funders that Polis satisfies community as well as academic and research needs. The business model for SAVI also requires Polis to seek enhancement and development funding from competitive sources. Within Polis, SAVI operates as a project, and thus the center is able to leverage it effectively for external funding to serve these ends. With numerous GIS projects, Polis has been able to leverage technical developments in one area of its work for SAVI's benefit. In this fashion, it also has been able to link SAVI to other university-based research projects, notably in the new field of health geographics. Polis also has developed fee-based income by consulting with over 20 cities nationally on the development of community information systems (Fig. 2.8), and in 2009 it began to lease the SAVI processing and visualization system to other cities, with the Des Moines, Iowa CIS launched in 2010.

Annual operational costs for SAVI are approximately $350,000 (2009), with enhancement costs averaging around $100,000. The SAVI business plan calls for local support to underwrite approximately 55% of all expenses by 2010, with Polis grants and fee-based income generating the other 45%. Figure 2.9 shows the distribution of these costs by sector.

Through agreement with the funders, Indiana University owns the SAVI technology, but United Way of Central Indiana (UWCI) serves as community trustee, which means that most community-based funding flows through UWCI to Polis
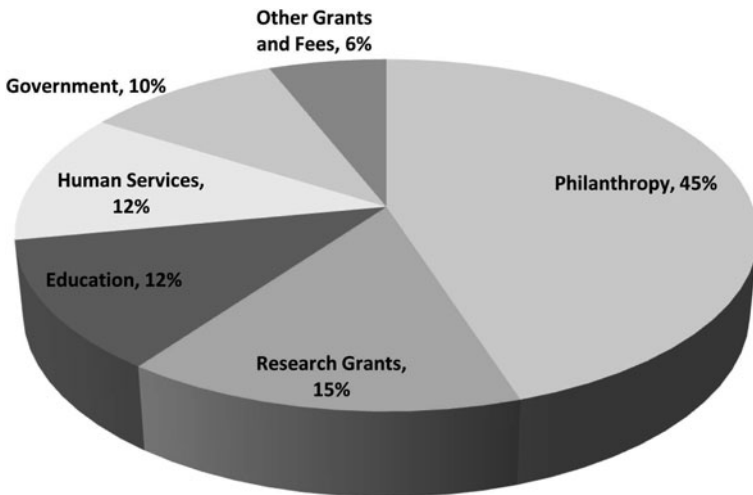
Fig. 2.9 SAVI funding model
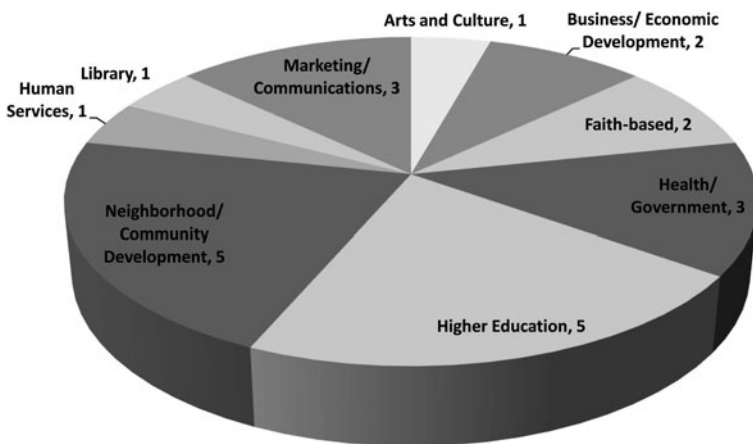
Fig. 2.10 SAVI advisory board members by organization type

under a master agreement and a series of task-specific work orders. This arrangement offers assurance that SAVI will not become a captive to academic interests and will continue to serve the larger community need for data. It also provides a way to measure the success of SAVI because the task orders require reporting on all usage of the system and other indicators of demand for the system. SAVI also has a board of advisors representing important community interests (Fig. 2.10); this board is jointly appointed by the university and UWCI and helps the SAVI staff establish goals and objectives for the system's long-term development and ensures that it develops in a manner that is sustainable.

Uses of SAVI

Community

Community developers and human service planners were the initially targeted audiences for SAVI. Over its 15-year existence, the SAVI audience has expanded to multiple and varied community audiences with data and analysis necessary for strategic and program planning, identification of target audiences, needs assessments, co-location of services, and evaluation, among numerous other needs. Examples of use include the following:

(a) Both the metropolitan YMCA and the Indianapolis-Marion County Public Library used SAVI to identify strategic locations for new branches and services.

(b) The Indianapolis Reentry Mapping Network, a local coalition affiliated with the nationwide Reentry Mapping Network (RMN), applied SAVI for planning the improvement of local services and community involvement for successful prisoner reentry.

(c) The Indianapolis Neighborhood Housing Partnership used SAVI data to help communities understand a variety of neighborhood-level issues and trends.

(d) The George Washington Community School used SAVI to create lesson plans for the K-12 classrooms that were focused on the communities where students lived.

(e) The Indianapolis Neighborhood Resource Center applies SAVI data for asset-based community development and uses SAVI asset information to help neighborhood residents see the strengths of their communities and not simply their problems.

(f) The John H. Boner Community Center in the Near Eastside of Indianapolis uses SAVI to assist them in making more effective decisions, policies, programs, and actions and to generate outcome reports to funders, including the 2012 Super Bowl Host Committee, a large funder and supporter of the Legacy Project, which in turn supports the development of the Near Eastside. The Boys and Girls Clubs of Indianapolis used SAVI to help evaluate the use and accessibility of programs and services offered at its locations and to obtain a major federal grant for new programs.

(g) The Indianapolis Public Schools, the state's largest school corporation, uses SAVI data to support grant requests, enrollment projections, bus route revisions, and programming.

(h) A pediatric researcher at the Indiana University School of Medicine used SAVI to locate vulnerable youth populations and to understand the environmental influences on obesity and influence healthier life choices.

(i) A researcher in the Indiana University School of Nursing used SAVI to identify the neighborhoods most at risk for breast cancer and to identify community organizations that could serve as sites for education and/or screening opportunities.

 (j) The Urban Institute in Washington, DC, has used SAVI in numerous cross-site
      studies on issues ranging from school readiness to neighborhood health.
 (k) The Greater Indianapolis Chamber of Commerce used SAVI to co-locate men-
      toring programs for two area high schools in an effort to improve graduation
      rates.
 (l) The Polis Center and the Local Initiatives Support Corporation are using
      SAVI to establish neighborhood-level indicators to evaluate local economic
      development and neighborhood sustainability efforts.
 (m) Second Presbyterian Church, one of the city's major congregations, used SAVI
      in developing its strategic plan. It mapped membership to understand both the
      areas where congregants lived and to identify the potential for teaming with
      service organizations in those neighborhoods to provide mission outreach.

Research

SAVI also has become a major resource for researchers in disciplines interested in community dynamics, such as sociology, social work, and nursing. Both social work and nursing undergraduates from IUPUI receive training in SAVI and must use SAVI in class research projects. This requirement not only guarantees the university's financial support of SAVI as a teaching and research tool, but it also prepares case workers and community nurses to think in terms of data when doing their work. The benefit accrues directly to the Indianapolis MSA because many of these graduates enter practice in the area.

Perhaps the most consequential development was the interest from academic researchers, especially in public health and medical/health translational science, who mined the data for sophisticated analyses of community dynamics and the contextual influence of causation and care of diseases. One result was an effort to link clinical and community information. In 2009, the Regenstrief Institute, a world leader in health informatics, teamed with The Polis Center and SAVI to win a Centers for Disease Control and Prevention (CDC) Center of Excellence in Public Health Informatics grant to speed this work; in turn, Polis created a new Center for Health Geographics to facilitate research in this new field by social scientists.

At its conception in 1994, few people anticipated SAVI's extensive use as a resource for the public health research community, but the system's development coincided with a resurgence of interest in the early 1990s into questions of how place and space influence human health (Macintyre, Ellaway, & Cummings, 2002). In 1997 a pediatrics researcher from the University of Chicago's Pritzker School of Medicine used SAVI to investigate epidemiologic associations between commu-nity factors and substance abuse during pregnancy. This step was the beginning of a still-growing stream of applications by medical and public health researchers. At the 126th Annual Meeting of the American Public Health Association in Washington, DC, in 1998, SAVI presented its perspective on the emerging relevance of SAVI-like systems in the public health sector and in turn gained direct exposure to the growing

national trend to consider social and environmental determinants of health. SAVI also began reaching out to faculty members not only in public health, nursing, and medicine, but also in geography, sociology, social work, anthropology, and library science.

Faculty from the IU School of Nursing were among the earliest SAVI adopters, developing curriculum designed to demonstrate the potential value of spatially enabled administrative data sets for the examination of associations between community factors and health. In 2000, Polis partnered with the Indiana University Medical Libraries to develop the National Outreach Mapping Center (NOMC) for the National Library of Medicine. Although NOMC was a national project beyond the geographic extent of the SAVI database, it clearly benefited from SAVI in terms of designing a distributed system of data collection and interactive mapping. Public health research collaborations soon emerged with Children's Health Services Research unit, IU National Center of Excellence in Women's Health, IU School of Health and Rehabilitation Sciences, and IU Center for Aging Research, as well as with community partners, such as the Ruth Lilly Health Education Center and the Westside Health Promotions committee, and with public health agency partners, such as the Marion County Health Department, and the Indiana State Department of Health. These experiences helped SAVI gain a better sense of researcher needs, which often differed markedly from the needs of community users. For example, researchers typically are most interested in downloading data (and metadata) for analysis within their own tools of choice. Community-based organizations on the other hand want interactive tools that allow them to immediately visualize integrated data about their communities.

Most recently, SAVI has begun to collaborate with the Regenstrief Medical Record System (RMRS), which is now a part of the larger Indiana Network for Patient Care (INPC), the most advanced and extensive medical record system in the nation. With Institutional Review Board (IRB) approval and strict protocols for privacy protection, the INPC is a rich source of clinical data for researchers. Combined with SAVI, the most comprehensive community information system in the country, researchers have a unique opportunity to link individual clinical data with a rich set of community compositional and contextual data. A series of meetings with Regenstrief leadership led to the outline of a new working relationship, which led to a joint proposal to implement multilevel and geospatial data analytic research tools for health that would link the SAVI and the INPC systems. In September 2009, this effort bore fruit when the Regenstrief Institute led a successful proposal to the Center for Disease Control for the development of the Indiana Center of Excellence in Public Health Informatics. This integration of SAVI and clinical records will advance the possibilities for public health research that includes community factors within its theoretical models.

Another significant area of collaboration facilitated by SAVI is the Indiana Clinical and Translational Sciences Institute (ICTSI), funded by NIH in 2008. While Polis is involved with multiple cores of the ICTSI program, initial efforts are focused on the Community Health Engagement Program, whose mission is to promote collaboration among community partners throughout Indiana to improve research,

health, and healthcare. The spatially enabled community information and interactive mapping tools offered by SAVI provides an ideal platform to elicit dialogue between community organizations and researchers on their respective public health goals and priorities. Strategic partnership with GIScientists at Ohio State University, the University of West Virginia, and Purdue University provides us with advanced expertise in spatial analysis, visualization, PGIS, and communications that complements the rich community information system resources and strong partnership with the public health and medical sectors.

This work also has had a direct benefit to communities in Central Indiana. In 2008, the Marion County Health Department teamed with The Polis Center and three other IUPUI centers to create an Indianapolis Quality of Life Indicators Project (Fig. 2.11), with an initial emphasis on public health indicators. The resulting Web portal heavily taps SAVI data and functionality. It also offers a way in which community residents can begin to contribute their own information and perspective, which in turn will influence the types of indicators SAVI develops in the future (Fig. 2.11).
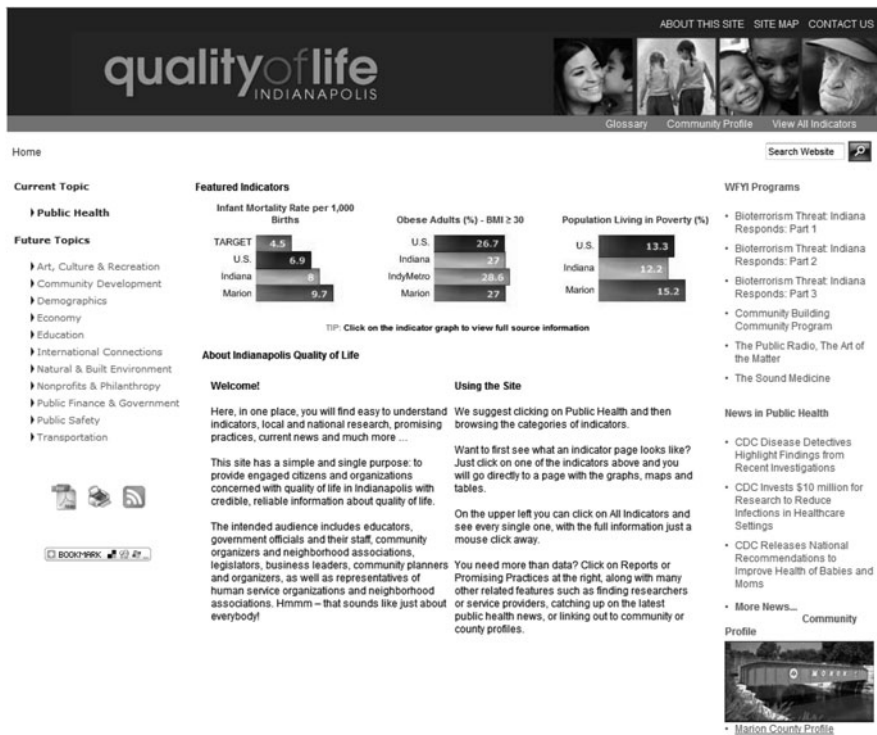
Fig. 2.11 Home page for Indianapolis Quality of Life website

The Future of SAVI

In 2010, SAVI entered its fourth iteration. The goals of this version of the website are (1) to create an environment for data sharing, collaboration, and knowledge sharing; (2) to improve its usability; and (3) to make it faster. Recognizing how Google had changed the paradigm for web mapping, SAVI developed a caching engine to allow it to serve vector maps quickly. It also developed a new search engine to allow users to find data more quickly. It added Web 2.0 social networking tools as well and opened even more space for user-generated content, thus moving away from an exclusive reliance on administrative data to describe community conditions. Although SAVI aims to become more of a truly community-based system than it already is, its primary goal will remain what it always has been: to develop the capacity of Central Indiana organizations, researchers, and citizens to use data effectively to make decisions about the quality of their lives and about the future of their communities.

Lessons Learned

During its 15 years, SAVI has learned valuable lessons relevant to any community seeking to develop a sustainable CIS, including the following:

(a) Develop strong collaborative relationships with and mutual respect among users, data providers, and funders. This condition places a great responsibility on staff member to be trusted and trustworthy partners that understands and seeks to accommodate differences without sacrificing his/her own sense of what must be done to build a successful system.
(b) Understand the needs and working styles of various user communities. A neighborhood organization likely has much different needs for data than do academic researchers or government officials charged with creating and implementing policies.
(c) Create a flexible system capable of migration to new technical platforms and open to the addition of new technologies. Ten years ago, SAVI could not have foreseen the rapid growth of GIS-like tools such as Google Earth, but its system and staff were ready to embrace them when their usefulness became apparent.
(d) Diversify the funding base as quickly as possible. Foundations and other philanthropies often serve as valuable sources of seed or developmental funding; they rarely will offer major long-term sustaining support. Often, various parts of government, universities, and community-based agencies are capable of annual fees, but none of them can carry even the majority of operating costs alone.

(e) Identify a core staff that is both technically capable and community savvy. Community information systems by their nature are hybrids. They rely upon technology but must be suitable to needs of the geographic and cultural communities they serve.

(f) Focus on the data and its interpretation, allowing other groups to advocate policies. Even small-sized communities are more heterogeneous than they might appear. What communities need most are reliable data and people who can interpret it with integrity.

From Lessons to Practice: Recommended Steps

SAVI has consulted with over 20 cities in the planning and start-up phases of their initiatives using the lessons learned over its 15-year history. Its recommended steps for developing a sustainable community information system include the following: (1) develop a strategic plan, (2) acquire, process, and package data, (3) build or acquire an information system for data display and analysis, and (4) establish a capacity-building program to use the data and tools effectively. The time and costs required to develop a community information system are highly variable, and good estimates of both time and expense are two outcomes of effective planning.

Develop a Strategic Plan

The strategic planning process begins with three information-gathering components: (a) strategic needs assessment, (b) data and content needs assessment, and (c) capacity assessment. The product will be a strategic plan that identifies the mission, goals, funding strategy, stakeholders, data content, and governance structure of the proposed community information system and a path to reach the short- and long-term goals of the initiative.

(a) *A strategic needs assessment* confirms the need for a CIS, defines and tests assumptions about the target audience and its needs, understands the potential benefits to those audiences, and establishes community and stakeholder commitment. This assessment involves discussions with executive-level staff within key stakeholder groups, including potential data providers, users, partners, and funders of the CIS. The purpose of these discussions, which are most effectively conducted by a neutral, non-interested party to allow for candid responses and open dialog, is to conduct a strengths, weaknesses, opportunities, threats (SWOT) analysis, assess interest, identify resources, and make an initial assessment of sustainability and governance issues.

(b) *A data and content needs assessment* determines the specific needs among the potential user groups for data, tools, and capacity-building services. This assessment, which can be conducted in parallel with the strategic needs assessment,

entails both focus group and one-on-one discussions with program- and analyst-level staff from the potential user groups and data providers. The goal is to determine how organizations currently obtain their data, discover the types of data needed, identify gaps in data and resources, assess the capacity within organizations for data analysis, and determine the types of functions and outputs organizations need to be able to produce. The result of this assessment is a requirements document that outlines the content, functional, and nonfunctional requirements of the system.

(c) *A capacity assessment* determines the capacity within the existing partnership to develop, manage, and sustain the CIS. It highlights the strengths of each partner and identifies gaps, which may signal the need for new partners and/or contracted services to fill those gaps. An assessment of the current and potential partnership guides the development of the governance and organizational structure for the collaboration, including but not limited to clearly articulated roles and responsibilities of each partner, project management, and reporting and accountability processes for the CIS.

Acquire, Process, and Package Data

A CIS is only as good as its data, so it is critical to establish standards and procedures to ensure the quality of the data. This work is best done in collaboration with the data providers, who are the experts in the format, content, and quality of the data they maintain. It may be helpful to revisit the capacity assessment from the first phase to confirm the technical and analytical capacity of the data provider, understand the data quality, content, and formats of the data, and determine whether and how the provider's data analysis needs can be supported through the CIS. It also may be advisable to outline a phased approach to data development. Identifying a few major data sources for initial development will allow proper configuration of the system, as well as procedures, routines, and tests to ensure its ability to create a product required by potential users.

A processing system that standardizes and automates the data scrubbing, calculations, and packaging of data for dissemination will improve efficiency and quality. Most CIS have developed custom data processing systems because no commercial off-the-shelf solutions for a CIS exist currently and because data formats and completeness vary considerably from place to place.

Build or Acquire an Information System for Data Display and Analysis

This step most often takes the form of a website for users to access either static or interactive charts, maps, and reports. It can be done in parallel with the data development efforts in step 2. The requirement specifications from the data and content

needs assessment should drive the tools and capabilities the system will have. There are some commercial them solutions that provide basic mapping capabilities, but most, if not all, require some technical knowledge to customize for a community's unique data. Once again, many communities resort to custom systems, although in this instance the need to do so is less apparent than for data development. Some cities have collaborated on the development of shared toolkits; others, like SAVI, offer to customize its system for another community to use under license.

Establish a Capacity-Building Program

Organizations often do not fully understand the potential that data offer for improved planning, monitoring, and evaluation of programs and services because they lack a basic understanding of data analysis. Establishing a training program that teaches data analysis and spatial data interpretation is a good first step to helping organizations discover how data can be of use. Other aspects of a successful training program can include how to use specific data tools or how to use data for purposes such as strategic planning and grant writing.

Some CIS offer custom-mapping services that provide the maps to the organization and help them interpret it for their purpose. Others publish regular reports or briefs on a particular topic or issue to inform organizations. Technical support and consulting offer other means for reaching organizations. The types of capacity-building services the CIS should offer depend upon the available staffing, the target audience, and the need identified in the strategic planning phase.

The development of a community information system is an iterative process that involves ongoing feedback from stakeholders and users, continual testing and improvement, and relationship building. These steps should be revisited periodically to ensure the system continues to meet the needs of the community.

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Chapter 3
Sustaining the Operations of Community Indicators Projects: The Case of Twin Cities Compass

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Abstract As important as community indicators projects can be to a region's health and prosperity, they do not come with built-in revenue streams. This chapter explores how operations can be sustained based on the model established in Twin Cities Compass, a regional project covering the Minneapolis-St. Paul metropolitan area in Minnesota, USA (population 2.8 million). The model consists of grant-funded "core" operations, supplemented by project-related contractual work. The case study presents budgetary information, discusses eight strategies used to develop and maintain an audience, provides examples of project-related contractual work, and closes with lessons learned while developing the model.

Introduction

Twin Cities Compass, a regional community indicators project covering Minnesota's Minneapolis-St. Paul seven-county metropolitan area, has a mission resembling that of most community indicators projects: to provide information that will help improve the region's quality of life and economic competitiveness. And, similar to most indicators projects, Compass has had to face the practical reality that it must sustain itself in order to achieve that mission. While much has been

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written about what community indicators projects can do to improve a region,[1] less has been written about sustaining the business operations of an indicators project. Community indicators projects may have constituencies and community champions, but they generally do not have the built-in revenue stream derived either from being essential to the daily operations of other organizations, or from creating a product that is widely saleable.

This chapter discusses the business model developed to sustain Compass that other indicators projects may find useful. The basic model includes grant-funding support for central "core" operations which contribute to keeping the project useful, relevant, and in front of the key audiences of community leadership, including the foundations which provide the grants. Additional funding comes from contractual projects that spin off from that core. Before delving into the details of the model we provide some general background on the project.

Background

Brief History

An annual "inter-city leadership tour" provided the stimulus to expand an existing, smaller indicators project into a dynamic community indicators initiative. Each year, a group of leaders from the Minneapolis-St. Paul metropolitan area, including mayors, business executives, and civic leaders travel to see what they can learn from the nation's other major metropolitan areas. In 2004, that group traveled to Boston, Massachusetts, where they learned about the Boston Indicators Project, which has become a model community indicators project.[2]

The inter-city leadership group admired both the breadth and the action orientation of the Boston Indicators Project and sought to replicate the effort in the Twin Cities. In subsequent conversations, Wilder Research, an arm of the Amherst H. Wilder Foundation, became the logical home for the project, both because of Wilder's reputation as a credible, non-partisan, community-oriented research organization, and because of its previously existing, but smaller-scale indicators project, *Metro Trend Watch*. By 2006, initial funding for the new project was secured, a Governance Committee was established, and staff began an 18-month process of convening over 300 advisors to help assemble what was to become Twin Cities Compass, which officially launched in February 2008.

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[1]In addition to previous volumes of this series, see for example, Swain and Hallar (2003), Dluhy and Swartz (2006), MartinRogers, Rausch, and Mattessich (2009).

[2]See http://www.bostonindicators.org/IndicatorsProject/ (Last accessed 2009, December 16). Also see Kahn (2006).

Basic Approach

From the outset, Twin Cities Compass constituted an indicators *plus* action project. The project would not only track indicators, it would also serve as a catalyst for regional change and improvement. To accomplish this, two tracks were established, reflecting the project's tag line: "Measuring progress. Inspiring action."

Measuring progress. Early on, Twin Cities Compass established itself not as a compendium of all possible community indicators, but rather as a source that would highlight a handful of the most essential data on each of several topics, while providing a gateway to a wide variety of other relevant sources. In addition, due largely to an influential local project carried out in 2005 by the Brookings Institution,[3] Compass committed to cross-tabulate each of its primary indicators by race, income, and place, whenever possible, to identify where significant disparities exist, and where action might be best targeted. Based on input from the project's Governance Committee, Compass settled on nine major topics: civic engagement, early childhood, education, economy and workforce, environment, health, housing, public safety, and transportation. Advisory groups convened for each topic to select two to four "key measures" that the project emphasizes as vital to understanding the region's progress (more on the advisory group process appears below). In addition to providing key measures for each topic, the Twin Cities Compass web site provides links to other data sources ("more measures"), and a library of relevant reports and web sites.

Inspiring action. Beyond providing indicators, Twin Cities Compass actively seeks to improve the region by inspiring action. This is accomplished in two ways: by promoting relevant information on the project's web site, and through staff involvement in other regional initiatives. Relevant information is promoted through an "ideas at work" section within each topic. This section includes information about collaborations and initiatives, as well as evidence-based strategies that have been demonstrated to work. Perhaps more uniquely, project staff are actively involved with various initiatives that attempt to improve regional quality of life, some of which we describe in the section on contractual work. While the action orientation of the project is approached with care to avoid appearing partisan, it is an essential part of the project's business model.

Initial Impacts on the Community

The outcomes of a community indicator project are often measured through what might be more properly thought of as "outputs," including numbers of media mentions, presentations delivered, or web site usage statistics. We discuss these for Compass, in relation to the project's model. The larger question remains, however:

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[3]Brookings Institution (2005).

What kinds of impacts do community indicators projects have on anyone's actual quality of life?

In Twin Cities Compass's short tenure it has several accomplishments of note. First, it has visibly contributed to an upsurge in interest in data-driven decision making by our target audiences in government, philanthropy, and non-profit leadership. This interest is likely driven, in part, by the current recession and the resulting need to focus resources. As leaders in the region struggle to make hard decisions in a time of growing needs and shrinking resources, more interest than ever before has developed in having decisions guided by unbiased data, and in using this information to help maintain accountability. Evidence of this "movement" comes in a variety of forms, from county and municipal government inquiries to partner with Compass as a part of their performance measurement efforts, to the citation of Compass in the local press in articles encouraging rational decision making and accountability.[4]

Perhaps the two biggest signs of the movement toward data-driven decision making in the region are (1) efforts at the state legislature to revive the now-dormant "Minnesota Milestones" state-run indicator project,[5] and (2) the references to Twin Cities Compass as an example of how state and local government might improve its work, which appeared in a fairly high-profile white paper issued in response to the state's budget crisis during the most recent legislative session. The former happened at a time when Wilder Research had been asked to expand Twin Cities Compass to become "Minnesota Compass," which subsequently led to a series of discussions to promote collaboration among legislators, the Minnesota State Demographer's Office, and Compass. The latter specifically recommended:

> Prior to a Tax Expenditure becoming effective, its authorizing body must clearly:
> a. Determine the policy outcome desired (i.e. result) for which the tax expenditure in being enacted b. Assign appropriate performance measures for that outcome. Examples of appropriate performance measures could be the Twin Cities Compass measures produced by the Wilder Foundation. These measures address such things as Economy and Workforce, Housing, Education, Health, etc.[6]

Another tangible outcome of Twin Cities Compass to date is that two major local grant-makers – the Greater Twin Cities United Way and the McKnight Foundation – have specifically included one of the project's key indicators among their central priorities. The proportion of third graders who meet state reading proficiency standards is one of four "key measures" in the education section of Twin Cities Compass. This indicator has garnered some attention because more than one in five third graders fail to meet the standards, including even higher proportions of low-income students and students of color. The commitments made by the two grant-makers are meaningful, especially at a time when many foundations have cut back on their outlays.

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[4]For example, Editorial: Charting a course – with facts (2009, November 18)

[5]See http://www.mnplan.state.mn.us/mm/ (Last accessed 2009, December 16) or Minnesota Planning (1998).

[6]Public Strategies Group (2009, p. 3 of Chapter 8).

Twin Cities Compass has led to many other initial outcomes, some of which appear below, but the two just mentioned provide a sense of the initial impacts of the project on the region's quality of life.

Budget Overview

As mentioned earlier, the basic business model for Twin Cities Compass is one that relies on a strong, grant-funded "core" supplemented by entrepreneurial spin-off projects. A brief description of the project's budget provides background information for understanding how the business model works.

Table 3.1 shows a simplified version of the budget for Twin Cities Compass and related projects as it has evolved over 3 years. In 2008, when the project was fully staffed and publicly launched, Twin Cities Compass was 100% grant funded. In 2009 project funding was expanded and diversified in two ways: (1) several foundations supported the expansion of Twin Cities Compass to include the entire state (Minnesota Compass), and (2) approximately $39,000 of contractual projects were added to the broader portfolio. In 2010 the project will likely rely somewhat more heavily on contractual work. Note that the project currently does not receive funding from any governmental sources.

We currently think that a realistic goal is to have about a $600,000 annual project for the next several years that is split between a grant-funded core that comprises between two-thirds and three-fourths of that budget ($400,000–$500,000), and "Compass-related" contractual work that makes up the remainder. While all 18 grantors that currently support the core may not stay involved for the long term, it

Table 3.1 Compass budget, 2009–2011

	2008	2009[a]	2010[a]
Annual revenue	$325,000	$550,000	$600,000
Philanthropic/grant funded ("Core")[a]	$325,000 (100%; 9 grantors)	$511,000 (93%; 18 grantors)	$400,000–$500,000 (67–83%; 17 grantors)
Contractual/project-based ("Compass-related")	$0 (0%)	$39,000 (7%)	$100,000–$200,000 (17–23%)
Expenses	$325,000	$550,000	$600,000
Salary and benefits[a]	70%	64%	64%
Professional fees (Web site design and database programming)[a]	4%	10%	9%
Meeting expenses including food and travel[a]	2%	2%	2%
Printing and mailing[a]	1%	1%	2%
Overhead, including rent and facilities[a]	23%	23%	23%
Approximate full-time equivalent employees	2.7	4.0	4.2

[a]2009 and 2010 budgets include expansion of the project from the Minneapolis-St. Paul seven-county metropolitan region to the entire state of Minnesota. 2010 is an estimate.

is likely that at least 12 of them will, and that the project will attract support from at least a few new foundations.

The following sections discuss in greater detail the activities that the project has undertaken to continue to move toward a more fully-developed model, where the grant-funded core remains firmly intact, but a higher proportion of the project is supported by contractual work.

Sustaining the Core

Indicators projects without an audience neither improve the quality of life in their region, nor are they likely to be long-lived. Indicators projects, therefore, have adopted a variety of ways to stay in front of their audiences. Twin Cities Compass has adopted eight main strategies, discussed below roughly in order of importance, all of which contribute to keeping the project useful, relevant, and in front of the key audiences of community leadership, including the foundations which support the central core.

Public Web site

The public web site (www.TCCompass.org) serves as the primary communications vehicle for Twin Cities Compass. It has obvious importance: it provides information. It also serves another, less obvious function: it keeps the project's stakeholders involved through continuous participation in improvement of its content.

In terms of providing information, we have attempted to keep the public web site easy to navigate and engaging. Importantly, we have tried to balance investments in the web site with other project investments. For example, project staff recognize that, although we can and should leverage interactive technology, the project does not have the resources to compete on a daily basis with other web sites purely on cutting-edge design. In the age of improving search technology and a recent boom in the number of sites that provide immense amounts of data on demand, the value of the Twin Cities Compass public web site comes in ease of use and relevancy to local concerns.

The public web site benefits greatly from an early decision to focus most attention on only two to four "key measures" on any topic. This helps in our efforts to avoid a common pitfall of community indicators projects: overwhelming the audience with data. Thanks to the project's communications staff, the web design invites users to simply get a "key trends" overview or maybe focus solely on the overall regional trends for the few key measures that might interest them. The web site is useful on that level alone, but end-users who need more information can also find variations within trends by race, ethnicity, income, and gender, as well as the source notes and methods. Further, end-users can use the site to navigate links to other related data sources ("more measures"); to research evidence-based practices and plug in to local plans and initiatives ("ideas at work"); or read through research reports in a searchable library.

The web site draws about 2,000 unique visits per month. This is respectable for a region with 2.8 million residents, but is not nearly the level of usage received by most local news media, including some newer online news outlets. Most of the traffic is driven by the project's other activities, most importantly a monthly electronic newsletter, and approximately one in seven visits comes directly from links to the project placed on the web sites of many of the project's partners.

Contributing to the site keeps our stakeholders involved, which helps reinforce the core of the project. Selecting "key measures" and helping to frame web site content is one of the primary activities for the several advisory groups that the project has convened. A final unintended benefit of the web site is that it helps to generate contractual work (discussed below) since others see it as a logical place for their own related content.

Advisory Groups

Over the first 3 years of Twin Cities Compass, including 1 year leading up to the project's formal public launch, we have convened 15 advisory groups, including well over 400 people. These advisory groups have been the most important aspect of the project, second only to the project's public web site. Advisory groups have been important because participants gain ownership, and become spokespersons and advocates for the project. Participants also lend credibility to the project, both by having their names associated with the project and by contributing their expertise toward shaping the project's content.

Our advisory group approach has succeeded, and it may be instructive to other quality of life projects. Advisory groups include one ongoing "Governance Council" and several "topic advisory committees." The Governance Council is perhaps the most traditional advisory group for an indicators project. Due to the project's genesis, Twin Cities Compass has been fortunate to have ongoing involvement from the top executives of most of the project's nine funders, the principals of the regional government (the Metropolitan Council), a prominent local "good government" group (the Citizens League), representation from a group of CEOs interested in regional improvement (the Itasca Project), and at least sporadic participation from the heads of the two major local newspapers, as well as an active suburban mayor. To date, this group has been called upon only semi-annually, but has been instrumental in shaping the overall direction of the project. Several members of this high-profile group have become valuable champions for the project.

All of the other advisory groups are time-limited, meeting only twice to help shape a particular aspect of the project. Twin Cities Compass has developed a formula for this process that includes: (a) identifying a high-profile co-convener who will help draw participants and help shape the agenda; (b) identifying a list of up to 50 invitees who provide carefully balanced representation from all community sectors, including government, academia, non-profit, for-profit, advocacy – and both "liberal" and "conservative" approaches to any given issue; and (c) two morning meetings no longer than 2 hours long, spaced about 2 months apart. In the first

meeting, participants receive an orientation to Twin Cities Compass, and then they brainstorm how to represent a specific topic such as education, housing, etc. (typically identifying potential "key measures"). In the second meeting, participants provide feedback on a rough draft of measures and web content which project staff developed in response to the first meeting; they then develop consensus on what should appear when the given section is launched online, typically a month or so after the second meeting.

This formula has been used for each of the project's nine main topic areas (civic engagement, early childhood, economy and workforce, education, environment, health, housing, public safety, and transportation), as well as subjects that cut across those topics, including disparities (focusing mainly on racial and ethnic differences), aging, and immigration. In addition to improving the substance of our project and generating buy-in, some advisory group members have proposed and implemented contractual projects either because the process has inspired them to develop additional work or because they specifically wanted us to replicate the advisory group process in a project with them.

Forums Convened by Twin Cities Compass

Another important communications vehicle that keeps Twin Cities Compass top of mind for both the target audience and for the project funders is hosting forums ranging in size from 100 to nearly 300 people. Over the past 3 years, the project has hosted six forums: a project kick-off event hosted at Minnesota Public Radio, a "sneak preview" event for those who had participated in advisory groups prior to the project's actual launch, a launch event mainly targeting community leaders, a large forum on disparities in the region, and two large annual meetings. In addition, the project has hosted a smaller session specifically targeting grant writers and how they might take advantage of the resources available through Twin Cities Compass.

These forums typically include at least one of the project's funders at the podium, some sort of presentation on community indicators by the project's director, and use of audience-polling software to keep attendees engaged. Other elements of the forums have included panel discussions, audience question and answer sessions, and a 1-minute video contest. These events have been well received, because of both the content and the opportunity they offer for networking. The forums typically appeal to multiple community sectors, and several attendees have commented that they like the forums because they bring together people who might not normally interact and often generate discussions that cross topics, disciplines, and sectors.

As with other project strategies, the forums have dual benefits: maintaining the grant-funded core as well as cultivating contractual work that spins off of that core. The core is maintained because the forums allow the funders to share in the credit for the project in person, in a setting where people are actively being inspired by the project. The forums also have helped to generate some contractual revenues, since the work plans of some Compass-related projects include hosting a public forum.

In-Person Presentations

Presentations at events and meetings convened by others are another important means by which we have attempted to keep Twin Cities Compass in the forefront of our audience's mind, especially in the first year after the project's public launch. In the first 2 years of the project, staff made nearly 160 presentations which were attended by a combined total of about 1,800 people. Compass staff identified a list of target groups for presentations, and initially accepted invitations from nearly any group with an interest in hearing about the project.

In-person presentations have had important benefits. For one, they allow project staff to connect with certain segments of our audience who are less likely to interact with the project web site, attend a forum, or read a newsletter. For example, the project's director has now presented to all of the county boards of commissioners in the seven-county region. These presentations resulted in several commissioners publicly praising Compass and in follow-up meetings with department heads in several of the counties. Additionally, one of the counties expressed interest in contractual follow-up work as a result of these meetings.

The presentations also benefit the project by reinforcing the importance of Twin Cities Compass with the project's funders. For example, on several occasions Compass staff delivered presentations at meetings that happened to include members of the project's Governance Council, which highlighted the importance of the project in their minds and allowed them to publicly share in the credit. In-person presentations had the same sort of impact with people who served on the project's other advisory groups, who are also key constituents.

Media

Recognition in local newspapers, television news, and radio programming keeps the project alive in the minds of funders, as well as those who might be contemplating additional, contractual work. Twin Cities Compass has worked with local media in a variety of ways, some of which were planned, and others more spontaneous in nature.

Media stories have focused on Twin Cities Compass, alerting the public to its resources. For example, the project itself was the subject of an article in a local business magazine, as well as the lead editorial of one of the region's two major newspapers.[7] Additionally, Twin Cities Compass has been cited as a source in local media stories,[8] as have Twin Cities Compass staff.[9] Finally, project staff have directly generated media content by appearing as guests on a radio call-in show and authoring a commentary directly tied to project content.[10]

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[7]Rebeck (2009) and Pioneer Press (2009, November 18).

[8]For example, Giles (2009) and Hansen (2009).

[9]For example, Snowbeck and Webster (2009) and Benson (2009).

[10]Midmorning on Minnesota Public Radio ("The measure of poverty," 2009, September 11). Commentary: Helmstetter (2009).

An innovative media partnership has developed between Twin Cities Compass and the local major public television station. Twin Cities Public Television has an entire channel of local, public-service oriented programming, enabled in part by the plentiful broadcast capacity allowed by digital broadcasting. Twin Cities Compass actively participated in two series produced for this channel, which were then cross-promoted by both organizations, as well as the other involved partners.[11] In addition to the airing of the programs on television, both series are now available online and have been supplemented with additional materials, including discussion guides and other resources. With the coming launch of Minnesota Compass, we will now embark on a similar partnership with public radio.

Newsletters

Twin Cities Compass's regular monthly electronic newsletter keeps the project in front of funders and partners alike. In addition to providing routine updates about newly posted data and advertising upcoming events, the newsletter regularly features a "quiz" on relevant data, columns that provide analysis on a given topic ("Ask A Researcher"), and a commentary from a project partner ("For Discussion"). This content reinforces the importance of the project and helps the audience think through ways in which Twin Cities Compass might assist with efforts to improve the region.

About 1,900 people currently subscribe to the newsletter. About one-third of subscribers typically open the newsletter, compared with an average open rate for non-profit newsletters of about one-quarter, and nearly 40% of those opening the newsletter click through at least one of the links, compared with an industry average of only 6%. The newsletter has become the single biggest driver of traffic to the Twin Cities Compass web site. In addition to the primary newsletter, we have experimented with a shorter electronic newsletter specifically targeting the more than 400 people who have participated in our advisory groups. This has also been useful, although less effective than the primary newsletter.

Print Pieces

As a deliberate strategy, Twin Cities Compass produces "print pieces" – not a traditional annual report. Annual data books comprise a staple of many community indicators projects, and they do create some publicity, serving as a fixed point of reference for a project's target audience, and even as a revenue source.[12] We have

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[11] *Close the Gap* (based on Sohmer, Jackson, Katz, Liu, & Warren (2005)), produced by Twin Cities Public Television in partnership with the Itasca project and *Challenging Expectations* produced by Twin Cities Public Television in partnership with Travelers Foundation.

[12] For a detailed discussion of printed community indicators reports, including costs and revenues, see Holden (2006, pp. 184–188).

chosen not to pursue such a report for several reasons: the fact that printed reports quickly become outdated as new data become available; the high costs of producing a report, both in terms of person-hours and printing; and prioritization of newer online "viral" marketing techniques over more traditional approaches to reporting data. Over 2 years into the project, Twin Cities Compass has not received any requests to produce a traditional annual report.

The primary print piece is "Compass Points," an annual glossy brochure that provides a dashboard-style summary of the project's key measures on one side (see Table 3.2), and a summary of the project's recent activity on the other. Although Twin Cities Compass has a traditional-looking brochure describing the project, Compass Points is the most commonly used handout at events and presentations, since it provides a sense of the trends and comparisons that are more fully available on the project's web site. Several partners have requested bundles of Compass Points brochures to distribute among their staff or at their meetings. This is at least partly due to its content and format: a typical descriptive brochure might not be substantive enough for their needs, but they might not be willing to carry around a longer narrative report.

In addition to these uses, the Compass Points dashboard also has helped to stimulate some contractual work. Some local communities and some issue-specific initiatives have requested assistance from Compass staff, to develop benchmarks and dashboards for their own efforts, inspired in part by what they have seen in Compass Points.

Social Media

So far, Twin Cities Compass's use of social media has been largely experimental, but it appears promising. As our proficiency grows in this arena, it will likely become an increasingly important aspect of the project. The specific types of social media with which Twin Cities Compass is currently directly involved are:

Blogs. Twin Cities Compass does not have a blog of its own, but the project's director, Paul Mattessich, maintains a blog that commonly references Twin Cities Compass and related efforts.[13] In addition, other local bloggers have occasionally referenced Twin Cities Compass. The precise impact of the project's limited involvement in the "blogosphere" is unknown, but known mentions have reflected positively on the project.

Video. To date, the project's most successful foray into social media has been its use of YouTube for a video contest conducted in conjunction with the project's November 2009 annual meeting. Even without offering prizes, the contest resulted in 11 submissions, which were collectively viewed over

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[13]The Executive Summary http://execsum.blogspot.com/

Table 3.2 Compass points dashboard summary

Key measures	Local trend	Twin cities compared to US
Civic engagement		
Sense of community	WORSE **SAME** BETTER	NOT AVAILABLE
Perceived ability to improve community	WORSE **SAME** BETTER	NOT AVAILABLE
Volunteerism	WORSE **SAME** BETTER	WORSE SAME **BETTER**
Voter turnout	WORSE **SAME** BETTER	WORSE SAME **BETTER**
Early childhood		
Low birth weight	WORSE **SAME** BETTER	WORSE SAME **BETTER**
Early childhood screening	WORSE **SAME** BETTER	NOT AVAILABLE
Economy and workforce		
Per capita income	WORSE **SAME** BETTER	WORSE SAME **BETTER**
Economic output (annual change)	**WORSE** SAME BETTER	WORSE SAME **BETTER**
Proportion of adults working	WORSE **SAME** BETTER	WORSE SAME **BETTER**
Education		
Third grade reading proficiency	WORSE **SAME** BETTER	NOT AVAILABLE
Eleventh grade math proficiency	WORSE SAME **BETTER**	NOT AVAILABLE
Ninth grade attendance	WORSE **SAME** BETTER	NOT AVAILABLE
High school graduation	WORSE **SAME** BETTER	NOT AVAILABLE
Environment		
Air quality	WORSE SAME **BETTER**	NOT AVAILABLE
Greenhouse gas emissions	WORSE SAME **BETTER**	**WORSE** SAME BETTER
Protected natural land	NOT AVAILABLE	NOT AVAILABLE
Water quality	**WORSE** SAME BETTER	NOT AVAILABLE
Health		
Diabetes	**WORSE** SAME BETTER	WORSE SAME **BETTER**
Obesity	**WORSE** SAME BETTER	WORSE SAME BETTER

Table 3.2 (continued)

Key measures	Local trend	Twin cities compared to US
Health care coverage	WORSE **SAME** BETTER	WORSE SAME **BETTER**
Mental health admissions	WORSE SAME BETTER	NOT AVAILABLE
Housing		
Cost–burdened households	WORSE **SAME** BETTER	WORSE **SAME** BETTER
Homeownership gap	WORSE **SAME** BETTER	**WORSE** SAME BETTER
Homeless persons	WORSE **SAME** BETTER	NOT AVAILABLE
Public safety		
Victimization rate	WORSE **SAME** BETTER	NOT AVAILABLE
Crime rate	WORSE SAME **BETTER**	WORSE **SAME** BETTER
Fear of crime	WORSE **SAME** BETTER	NOT AVAILABLE
Transportation		
Transportation expenses (as % of income)	WORSE **SAME** BETTER	WORSE SAME **BETTER**
Traffic injuries and deaths	WORSE SAME **BETTER**	WORSE SAME **BETTER**
Infrastructure preservation	WORSE **SAME** BETTER	WORSE SAME **BETTER**

Note: Ratings of "worse" or "better" are generally based on a ten percent difference from previous years (for local trends) or national figures (for US comparisons).

Source: Twin Cities Compass (October 2009), "Compass Points 2009," Wilder Research. (Available at http://www.mncompass.org/_pdfs/CompassPoints2009_10-09.pdf)

5,000 times.[14] We suspect that many viewers were not previously aware of Twin Cities Compass. Besides helping to expand the project's audience, and adding to the annual meeting, many of the 1-minute videos are now being added to relevant sections in the project's web site, to help illustrate issues and solutions, and to bring a human face to an otherwise data- and text-oriented web site.

Social networking. Twin Cities Compass established a presence on Facebook in February 2009, largely in response to requests by stakeholders to provide a forum where issues presented by Compass can be discussed and debated online. As of April 2010, the project's Facebook group had 168 members, but actual discussions have been very rare. The project's involvement in Facebook has been useful, however, in providing another point of contact for our target audiences, including state legislators, many of whom are involved with social media.[15]

Micro-blogging. Twin Cities Compass established a presence on Twitter in July 2009, with the intention of driving traffic to the project's web site, as well as to provide another means by which to interact with reporters who were among the early adopters of the medium. This has been somewhat successful, although no media citations are directly traceable to micro-blogging activities. As of April 2010, the project's micro-blog had 462 followers, including several members of both traditional and online media, other non-profits, policy organizations, local politicians, and others.[16] Project staff typically provide updates at least once each working day, often including links to the project web site. It appears that micro-blogging currently drives up to 10% of the traffic on the project's web site.

To date, social media have not been instrumental in connecting Twin Cities Compass with contractual work. However, the project's experimentation with social media has placated advisors, who have rightly encouraged the project to "go where the discussion is happening" rather than waiting for the discussion to come to us. Additionally, early results of these efforts are promising. As with all of the project's communications vehicles, we will continue to evolve our use of social media and learn which avenues are most productive for our larger efforts to sustain the project's core activities, promote contractual work, and contribute to the improvement of the region.

Supporting the Project Through Contractual Work

As stated above, the Twin Cities Compass business model includes a grant-funded core, supplemented with related contractual work. This model works on two levels.

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[14] http://www.youtube.com/user/TwinCitiesCompass

[15] http://www.facebook.com/group.php?gid=65285822795

[16] http://twitter.com/MNCompass

First, contractual work can help forward the mission of a community indicators project. While tracking and publicizing community indicators and related information is important work, the impact of that exercise by itself on a community may be limited. Contractual work spinning off from that core offers an opportunity to contribute more directly with specific efforts to improve the community.

Second, contractual work helps to provide resources needed to sustain an indicators project. Many foundations are comfortable with funding the development and launch of a project, but some are less interested in providing operational funding over the long term. Thus, as some of the "core" funding diminishes, additional revenues are needed to support the ongoing work of the project. Fortunately, that may be about the same time that other initiatives begin to bring forward projects that leverage the momentum generated by the launch of the project's core indicators work. Since, at least in the cases discussed below, much of this contractual work builds directly off of the core work, charging those pursuing these related projects some of the costs incurred by the core project is justified. Twin Cities Compass has built a small portfolio of related projects within the first 2 years of the project's public launch, that help illustrate the types of projects that can serve this purpose.

Benchmarking. Some of the most obvious contractual work falls into the category of benchmarking, to help a community or collaborative measure and assess its progress. Examples for Twin Cities Compass include one effort that was actually undertaken free of charge with the suburban community of Burnsville, and a revenue-generating project tracking mental health indicators.

In the case of the Burnsville project, leaders of a newly formed community improvement effort approached Twin Cities Compass seeking assistance with identifying ways of implementing meaningful change. Since the project was so broadly defined, Twin Cities Compass first assisted by benchmarking the city relative to its county and to the Twin Cities as a whole, using the same set of key indicators as used in Twin Cities Compass. This helped the collaborative identify its priorities and move forward in a more focused manner.

In the case of the mental health indicators project, leadership of a high-level initiative to improve mental health care in the eastern part of the Twin Cities came to Compass because of the project's recognized success in gathering and presenting indicators in a way that is technically sound, and readily accessible, to a broad spectrum of stakeholders. That project has resulted in a contract to publish a quarterly dashboard that will help to focus attention on any observable bottlenecks in the east metro's mental health system.

Digging deeper. A second category of contractual work involves research that seeks to deeply explore topics treated only limitedly in the main indicators project. For Twin Cities Compass, the main example of this type of project to date is one on health inequities in the region. Following a major event on disparities in the Twin Cities, the Blue Cross and Blue Shield of Minnesota Foundation contracted with Compass staff for an in-depth examination of disparities in health outcomes. The foundation wanted to work with Twin Cities Compass on this project for a number of reasons, even though other public health researchers had some expertise. For one, the foundation sought to examine health disparities as they relate to other disparities

in the region that are already tracked by Compass, including income, education, and housing disparities. In addition, the foundation had been involved with one of the project's advisory groups, and was interested in assembling a similar advisory group for this project. Finally, the foundation also was interested in convening a forum to coincide with the public release of the report, similar to the forum that first caught their attention. Twin Cities Compass staff have been approached to do similar work on other topics, and would anticipate more opportunities along these lines, in large part because the project is housed in a larger research office that has a strong reputation beyond that of Compass.

Providing a counterpart to performance measurement. A third category of contractual work involves supplementing more specific performance measurement done by others. Although contracts have yet to be developed in this area, Compass staff have had repeated conversations with state and county government staff about how data tracked in Twin Cities Compass might serve as a community indicators counterpart to the departmental performance measures that they provide.

For example, for at least the past decade, Hennepin County (the largest of the seven counties included in Twin Cities Compass) has regularly produced a report that coupled community indicators with performance measures.[17] Since Twin Cities Compass tracks many of the same measures that have appeared in that report, county staff wonder whether it still makes sense for them to develop and produce the community indicators part of that report – especially in light of the county's current budget troubles and lay-offs. Twin Cities Compass may partner with the county in one of several ways, ranging from simply providing them with an area within our web site that they can point their audience to for Hennepin County specific indicators, to contracting for a more complete report. Compass staff have had similar conversations with other counties in the region, following a series of presentations to each of the county boards, as well as with the state of Minnesota due to its efforts to revive Minnesota Milestones.

Hosting web-related web content. A fourth and, perhaps, least obvious type of contract that Twin Cities Compass has developed to date involves hosting related web content. Generally, Twin Cities Compass adopted a web-friendly approach to sharing content with others free of charge. In this case, however, an anti-racism initiative came to Compass with the notion of developing a directory of local anti-racism and cultural competency trainers. Somewhat surprisingly, given that the initiative has a web site of its own, the initiative specifically wanted this content posted on Twin Cities Compass, since it felt that Compass would lend the content a higher profile and make it more accessible to a wider audience. Twin Cities Compass staff developed a contract to conduct an online survey to collect the initial information that will be presented through the directory, develop a webpage and searchable online database for the directory itself, and to regularly update that content. The contract specifically does not include a budget for promoting the content, through

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[17]Hennepin County (2006).

Compass's newsletter or other communications vehicles, since that will be an inherent benefit to the Compass. Promoting that content is likely to bring more traffic to the project's web site, including traffic promoted by the sponsoring organization.

Beyond these four categories, the possibility always exists for bringing in additional revenue by expanding "core activities" to other regions or topics of interest. As mentioned earlier, Twin Cities Compass became a statewide project in January 2010. Certain economies of scale can be attained in such a scenario. It is, for example, somewhat less costly for us to develop Minnesota Compass after having developed Twin Cities Compass, than it would have been for us to build Minnesota Compass from the ground up. Expanding the project to cover more topics or more geography, however, should really be seen as expanding the core activities, which may eventually face the same dangers of disinvestment faced by the original, smaller project. Nonetheless, expanding the project statewide may offer significant opportunities to diversify core funding, as well as contribute to the cross-sector momentum needed to address important community issues.

Other types of related projects may follow, but most are likely to fall somewhere within the four categories mentioned above. It is important to note that a key to successfully working this model is striking the right balance with pricing, so as not to end up in the position of actually subsidizing the spin-off project with resources that are needed for the core. Additionally it is important to recognize that the model requires proper and careful staffing. If the project does not have enough staff to undertake the contractual work, the model will not work (unless some of the work can be subcontracted), but if the project maintains more staff than are necessary to complete the contractual work, this essentially adds costs to the project's core.

Conclusion and Lessons Learned

This chapter illustrates one model of sustaining a community indicators project. It is possible to imagine other business models that would do equally well or could be combined with the model discussed here. For example, some projects pursue donations from individuals (Compass has just recently begun to experiment with this). Others appear to be successful with asking entities to sponsor a topic or an indicator. Additionally, it is not uncommon to seek sponsorships for specific events like those hosted by Twin Cities Compass. A more dramatic departure from the model described here would be for an indicators project to follow models established by other web sites and move to a subscription-based model, or a tiered model that allows the general public access to one layer of information, with yet another level restricted only to paying customers. Community indicators web sites that draw enough traffic could even contemplate ad placement as a form of revenue. So far, however, supplementing a grant-funded "core project" with the type of related contractual projects mentioned above has been the best fit for Twin Cities Compass, both for generating revenue and for meeting the broader mission of the project.

Table 3.3 Business model

	Activities	Funding
Core	• Information management • Web site • Convening advisory groups • Annual meeting and other forums • Presentations • Other communications activities	√ Foundation grants √ Occasional sponsors (potential) √ Individual contributions (potential) √ Advertising on web site (potential)
Related "Project-related work" work	• Creation and maintenance of dashboards • Special studies • Benchmarking • Web hosting • Other consultation	√ Contracts with foundations, governmental entities, initiatives, and coalitions

Source: Authors

Twin Cities Compass has learned several lessons in developing the business model summarized in Table 3.3. One is that broad involvement is crucial to building credibility and buy-in to the project. Advisory groups, including a high-profile governing body, have been our main vehicle for attaining this. It may be tempting for those assembling community indicators projects to skip over this step, and develop indicators with little or no consultation. After all, convening advisory groups takes time and resources – and likely results in very similar indicators to those that staff may choose without the benefit of advisors. Despite this, Compass staff have found that convening multipartisan, multisector advisors to help shape fundamental aspects of the project has paid back many times over. Additionally, the steps in the process described in some detail above, seem to obtain the right level of involvement; for most task-oriented advisory groups a cycle of two meetings spaced 2 months apart maintains momentum without overtaxing participants.

A second lesson is that having a diverse set of funding sources, both within the project's core and through project-related contracts, is highly advantageous. While having one or two large donors may be easier in the short term, having several funders enables more independence, helps facilitate the sort of collaboration needed to truly address regional improvement, and insulates the project from a crisis if a funder backs out. In addition, Compass is currently experimenting with online donations from individuals, which may prove to be more of a means of engagement than a crucial part of the project's ongoing financing, but this effort is consistent with the project's goals of diversifying funding as well as broadening the project's base of stakeholders.

A third lesson is that it is important to take advantage of a changed media and communications environment. Twin Cities Compass does not rely on the traditional

technique of producing a big report and then issuing a press release. Instead the project capitalizes on electronic newsletters, occasional brief print pieces, and innovative social media as a way of staying connected with its audience. Despite the fact that most community indicators projects have good web sites, to date few projects have involved themselves in social media. While this arena is new, and constantly changing, social media are currently the fastest growing means of communications. It is important for community indicators projects to go to where "the conversation" is happening, rather than waiting for the conversation to come to them. A related area that Compass has yet to explore is development of platforms and content for mobile devices. If smart phones and e-readers continue to gain in popularity it will be important for community indicators projects to establish a presence there as well.

The final, and perhaps most central, lesson is that community indicators projects should not think of themselves as being in the data delivery business, but rather in the business of community improvement. Although the democratization of data is a laudable goal, internet technology makes it difficult to compete either on volume of data or purely on the "wow factor" associated with whatever the latest web design may be. Although it is important to be involved in social media and mobile computing, it is more important to remain actively engaged in efforts to improve the region. Typically this requires face-to-face interaction, whether that takes the form of presentations, convening meetings, or participating in task forces. Opening the project to involvement in efforts to more directly improve the community through related contractual work can be an important way for community indicators projects to prove their worth – and generate much-needed revenue to sustain themselves in the long term.

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Chapter 4
Quality of Life at a Finer Grain: The National Neighborhood Indicators Partnership

G. Thomas Kingsley and Kathryn L.S. Pettit

Abstract This chapter describes the National Neighborhood Indicators Partnership (NNIP), a network of "information intermediaries" in 34 cities that develop and maintain neighborhood-level data warehouses. Their common mission is to make the data broadly available and help local stakeholders, particularly the residents of distressed neighborhoods, use the data themselves to achieve their goals more effectively. The chapter first reviews the types of NNIP institutions (primarily civic groups and university centers) and the range of their local administrative data. It then discusses how NNIP data are used to advance community interests by (1) comprehensively reviewing the well-being of the community, (2) addressing strategic issues, (3) and serving as the basis for program evaluation. It illustrates these themes by providing brief case studies from three NNIP partners in New Orleans, Cleveland, and Providence. The chapter concludes by describing the work of the partnership as a whole and implications for national policy.

Neighborhood Indicators: The Concept

This chapter differs from most in this book in two respects. First, it tells the story of a network of indicator initiatives rather than just one. Second, it focuses on the unique potentials of indicators at the neighborhood level.

Local leaders increasingly recognize that they need neighborhood-level indicators to understand how the quality of life is changing in their communities. The reason is that problems and opportunities are spread unevenly across America's urban areas. Some neighborhoods are dramatically worse off than others along many dimensions. This implies that watching trends in citywide averages alone can be seriously misleading. A modest citywide improvement in some indicators (unemployment rate, teen pregnancy rate, crime rate, foreclosure rate, or change

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in property values) might mask worsening conditions in distressed neighborhoods that have been offset by improving conditions in others. Furthermore, if local officials and other stakeholders do not have hard facts on the patterns and trends of such problems at the neighborhood level, they have no basis for targeting resources effectively or evaluating programs created to improve conditions.

The traditional difficulty, of course, is that good neighborhood-level data have been very hard to come by. Twenty years ago, those who wanted to obtain reliable data on neighborhood change could only do so once each decade when the national Decennial Census was released. But then, in the early 1990s, a new opportunity began to emerge. Groups in a few cities began to acquire and recurrently update administrative data sets maintained by local government agencies. They were able to take advantage of advances in computer capacities (particularly, newly developed Geographic Information System [GIS] software) to display and analyze aspects of neighborhood change from year to year.

In 1995, six of these groups brought an intriguing proposition to the Urban Institute, a nonpartisan public policy research organization in Washington, DC.[1] They thought they were onto something important and wanted to explore collaborating with an established policy research organization to both advance the state of practice in their field and spread capacities like these to other cities. After studying how these groups worked and what they were accomplishing, the Institute agreed the idea had potential.

The Institute and these early groups then jointly established the National Neighborhood Indicators Partnership (NNIP), obtaining initial operating support from several national foundations.[2] Early on, NNIP adopted two operating principles that all local partners have adhered to ever since: (1) while careful safeguards must be maintained to protect confidentiality, their central mission would be to make data available broadly to the public rather than allowing the data to be used to benefit any special interest; (2) they would work to *democratize data* – to help local stakeholders, particularly the residents of distressed neighborhoods, use the data themselves to achieve their goals more effectively. (These ideas and the early development of the partnership are discussed further in Kingsley, 1998, 1999 and Coulton, 1995.)

At that time, there were good reasons to question whether this concept would be sustained in the original cities, let alone spread to others. Compared with the task of collecting citywide indicators, this work is much more challenging. Those who would take it on have to develop the expertise and resources to operate sophisticated computer-based information systems. They also have to convince a number of public agencies to share their detailed data files on a recurrent basis over the long

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[1]These groups had all been a part of the Rockefeller Foundation's Community Planning and Action Program, which, under the leadership of James O. Gibson of the Foundation, gave special emphasis to data development and use in all of its sites.

[2]The Annie E. Casey Foundation has been the leading funder of NNIP since it began. The Rockefeller and Fannie Mae Foundations have also provided substantial support. For more information about NNIP, see http://www.urban.org/nnip.

term – a process requiring considerable political as well as technical skills. Further, they have to use their data to produce a stream of useful products every year to convince funders that the benefits from their added "information infrastructure" justifies the investment.

In spite of these challenges, however, the concept has proven surprisingly robust since it was introduced 15 years ago. The partners in the original cities are still going strong, organizations in 27 other major cities have developed similar capacities and joined NNIP (bringing the current total to 34), and there are several others close to meeting the same standards. In addition, the work of these local "information intermediaries" has gained considerable recognition of late, nationally as well as locally. Their contributions to understanding and addressing the foreclosure crisis have probably been the most notable in the past few years.

The remainder of this chapter tells the story of NNIP in more detail. The next section reviews the types of local institutions that have become partners in NNIP. The one after that describes the types of data that NNIP partners assemble and how they make that data available to the public. We then turn to an examination of the work itself, with one section discussing the range of projects the partners have undertaken, and then another describing three projects that illustrate the work in more depth. The following section then reviews the activities of NNIP as a partnership, and the final section discusses implications for national policy.

NNIP Institutions and Their Roles

The type of institution that takes on this work in each city is determined by the nature of the function itself and the characteristics of the local institutional/political environment. What happens today in cities that do not have NNIP capacities (most cities) is extremely inefficient. Community groups and service providers generally recognize the need for cross-topic neighborhood-level data. Some waste a great deal of time going from agency to agency to try to collect the woefully inadequate data typically available at this point. But these groups have other missions and it does not make sense for them to be trying to collect the same information. The obvious alternative is to assign that job to one "intermediary" – one that will collect the data from all relevant sources and build a system to serve as a "one-stop shop"; one that will provide good data on multiple topics to all groups that need it and make a commitment to doing all of this over the long term. Building an adequate system of course entails some cost, but it is almost sure to represent a net savings compared with the resources so many local groups now spend trying to collect data with such unsatisfying results.

As this logic becomes understood in a city, one or two local entities usually try to develop the capacity to perform this function and, as they recognize its value, civic and philanthropic leaders provide funding to support the work. Recognizing the economies of scale involved in operating this "information infrastructure," they fund just one organization, or a small number working together; i.e., it does not make economic sense to have a large number of groups trying to do this competitively.

Interviews with the funders in many cities indicate that the institutions they choose have to be ones they already trust, institutions with respected technical capacity and that will not be seen as disruptive by any major faction in the community. The 34 current partner cities in NNIP, listed in Table 4.1, illustrate that a fairly wide range of types of institutions participate. Of these partners

- 9 are community-oriented university departments or research centers
- 3 are freestanding nonprofits that perform NNIP-type work exclusively
- 12 are freestanding nonprofits that perform the NNIP work along with broader community improvement or direct service missions
- 1 is a government agency
- 2 are local funders (community foundations, United Way, etc.)
- 7 are formal partnerships between one or more of these types of institutions

Twenty years ago, one might have thought that a municipal agency (probably the planning department) would do this work. Indeed, many city governments have since built impressive GIS systems, have integrated data successfully across internal agencies, and are using this equipment quite productively for internal planning and management. In all NNIP cities, strong collaborative relationships have been built between the NNIP partner and city agencies. However, very few city departments have taken on the broader NNIP mission of serving a full range of external users themselves. Interviews suggest that one reason is that city staff may be seen as likely to serve the interests of the current mayor rather than the longer-term interests of the community at large, should differences arise. Moreover, it appears that city agencies often have a harder time collecting data from other governments (county, regional, and state agencies) and even other city agencies than more "impartial" outside NNIP partners. Of course, being outside of government is not a guarantee of impartiality either. For example, there is a great deal of mistrust between grassroots community groups and universities in some cities. The university centers that are now NNIP partners have had to demonstrate a strong ongoing commitment to community service and respect of local interests to be successful.

The organizations vary greatly in their overall missions. A few are standalone nonprofits dedicated solely to fulfilling the data intermediary role. Most are more complex and working toward several missions. In addition to NNIP functions, they may run social service programs, fund community initiatives, produce original research, or offer other consulting services. Despite this range of organizational homes, all of the partner organizations share a commitment to creating a multitopic neighborhood-level data system and helping the data get used for decision making in their communities.

A recent survey of NNIP partners (24 responded) also shows that they are quite varied in scale: annual budgets are below $150,000 for one-third of them, from $150,000 to $500,000 for 38%, and above $500,000 for the remaining 29%. All partners both receive general support funding and earn additional funding by providing studies and other services to clients for a fee. For 29% of them, general support

Table 4.1 National neighborhood indicators partnership (NNIP), local partners – June 2010

Atlanta: Neighborhood Nexus: Office of University-Community Partnerships, Emory University, the Atlanta Regional Commission, and the Community Foundation for Greater Atlanta (http://www.neighborhoodnexus.org/)

Baltimore: Baltimore Neighborhood Indicators Alliance (BNIA), Jacob France Institute, University of Baltimore (http://www.ubalt.edu/bnia/)

Boston: The Boston Foundation (http://www.tbf.org/) and the Metropolitan Area Planning Council (http://www.mapc.org/)

Camden: CamConnect (http://www.camconnect.org/)

Chattanooga: Ochs Center for Metropolitan Studies (http://www.ochscenter.org/)

Chicago: Metropolitan Chicago Information Center (MCIC) (http://www.mcic.org/)

Cleveland: Center on Urban Poverty and Community Development, Case Western Reserve University (http://povertycenter.case.edu)

Columbus: Community Research Partners (http://www.communityresearchpartners.org/)

Dallas: Institute for Urban Policy Research, University of Texas at Dallas (http://www.thewilliamsinstitute.org/) and (http://dallasindicators.org/)

Denver: Piton Foundation (http://www.piton.org/)

Des Moines: United Way of Central Iowa (http://www.unitedwaydm.org/) and Child and Family Policy Center (http://www.cfpciowa.org/)

Detroit: Detroit-Area Community Information System (http://www.d-acis.org/)

Grand Rapids: Community Research Institute, Grand Valley State University (http://www.cridata.org/)

Hartford: HartfordInfo, The Hartford Public Library (http://www.hartfordinfo.org/)

Indianapolis: The Polis Center and United Way of Central Indiana Community Service Division (http://www.savi.org/)

Kansas City: Center for Economic Information, University of Missouri-Kansas City (http://cei.umkc.edu) and the Mid-America Regional Council (http://www.marc.org)

Louisville: Community Resource Network (http://www.crnky.org)

Memphis: Center for Community Building and Neighborhood Action (CBANA), University of Memphis (http://suds.memphis.edu/)

Miami: Children's Trust (http://www.thechildrenstrust.org/index.asp/)

Milwaukee: Nonprofit Center (http://www.nonprofitcentermilwaukee.org/)

Minneapolis: Center for Urban and Regional Affairs (CURA), University of Minnesota (http://www.cura.umn.edu/)

Nashville: Neighborhood Resource Center (http://www.tnrc.net/)

New Haven: DataHaven (http://www.ctdatahaven.org/)

New Orleans: Greater New Orleans Community Data Center (http://www.gnocdc.org/)

New York: New York City Housing and Neighborhood Information System (NYCHANIS), Furman Center for Real Estate and Urban Policy, New York University (http://www.nychanis.com/)

Oakland: Urban Strategies Council (http://www.urbanstrategies.org/)

Philadelphia: Metropolitan Philadelphia Indicators Project, Temple University (http://www.temple.edu/mpip/) and The Reinvestment Fund (http://www.trfund.com)

Pittsburgh: Pittsburgh Neighborhood and Community Information Service, University of Pittsburgh (http://www.pghnis.pitt.edu/)

Portland: Institute of Portland Metropolitan Studies, Portland State University (http://mkn.research.pdx.edu/)

Providence: Providence Plan (http://provplan.org/)

Sacramento: Community Services Planning Council (http://www.communitycouncil.org/)

St. Louis: Regional Housing and Community Development Alliance (RHCDA) (http://www.rhcda.com/)

Seattle: Public Health – Seattle and King County (http://www.metrokc.gov/health/) (http://www.communitiescount.org/)

Washington DC: NeighborhoodInfo DC (The Urban Institute and the DC Local Initiatives Support Corporation) (http://www.neighborhoodinfodc.org)

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accounts for less than one-third of their total revenue but for another 21% it accounts for more than two-thirds.

Assembling and Disseminating Neighborhood Data

This work became possible because of two advances: (1) the decision by most local agencies to automate their records of administrative transactions (e.g., birth certificates, crime reports, property sales, code violations, foreclosure notices), yielding a host of descriptive information along with geographic identifiers (street addresses or land-parcel numbers) in each record; and (2) the availability of powerful GIS (Geographic Information System) software that can assign geographic coordinates to addresses and assign them to small areas (e.g., blocks, block groups, census tracts), enabling the calculation of indicators that can be displayed in maps, charts, and tables.

Expanding Data Acquisition from Local Sources. One of the most important achievements of NNIP partners, perhaps even more than the technical work of building information systems, has been their ability to work out long-term data sharing agreements with a host of local agencies and maintain their trust as the data have been used over the long haul.

Two decades ago, agencies were justifiably concerned about releasing even summaries of their administrative records because the cost of preparing the data to be shared was high and there were real risks that the data might be used against them in some way. What has changed? First, technology has dramatically reduced the cost of sharing data sets with others. Second, NNIP partners have applied the data responsibly so the risk of inappropriate use has been reduced (even though it will never be eliminated). Third, sharing data offers additional benefits to the government. The contributing agencies have developed confidence that the NNIP partners will spend time carefully cleaning their data to reduce the potential for error; answer questions about the data from the public in ways that will save them considerable staff time; and provide them with a substantial amount of useful data from other agencies in a form that will be easy to use.

Table 4.2 presents results from a survey on the data holdings of the 32 NNIP partners as of October 2009.[3] The first line on the table, for example, indicates that 75% of the partners (24 out of 32) regularly collect and maintain data from vital statistics records on total births for small areas within their cities. A surprising 38% actually have records keyed to the residential address of the mother (so that after geocoding, they can add up the totals for any geographic unit they choose). Another 13% have data on total births per year aggregated for block groups or census tracts, and the final 25% have the totals for zip codes or some other geographically defined subunits of the city.

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[3]See Coulton (2008) for a comprehensive review of local administrative data files that are available in most communities.

Table 4.2 Percents of NNIP partner maintaining local small-area data, by topic and level, October 2009

	Total	Address or parcel	School	Tract or block group	Zip code or other
Births and deaths					
Births total	75	38	–	13	25
Births by prenatal care	69	31	–	13	25
Births by birth weight	75	38	–	13	25
Deaths by cause	50	25	–	6	19
Education					
Student enrollment	94	28	34	28	3
Student proficiency	97	22	44	25	6
Student absences	72	25	25	16	6
Free/reduced price lunch	88	25	34	22	6
Special education	69	25	19	16	9
Kindergarten readiness assess.	25	9	3	6	6
Head start enrollment	34	6	13	6	9
Other pre-school enroll. (by type)	38	13	9	9	6
Child care	47	44	3	–	–
Child welfare					
Foster care	16	6	–	–	9
Child abuse/neglect	28	6	–	3	19
Health					
Immunization	22	3	3	3	13
Child blood-lead level	25	9	–	3	13
Hospital admissions by cause	28	6	–	–	22
Asthma	28	6	–	–	22
Emergency department visits	9	3	–	–	6
Ambulatory care	3	–	–	–	3
Injury survelliance date	6	–	–	–	6
Communicable diseases	13	–	–	–	13
Sexually transmitted diseases	16	3	–	3	9
Public assistance					
TANF	34	13	–	3	19
Food stamps	38	13	–	6	19
Medicaid	28	13	–	–	16
S-Chip	16	6	–	–	9
WIC	16	9	–	–	6
Subsidized child care	13	6	3	–	3
Housing assistance					
Public housing units	50	38	3	3	6
Housing choice vouchers	31	22	3	6	–
Other subsidized housing	28	19	3	3	3
Crime					
Reported crime (Part I)	72	53	–	6	13
Reported crime (Part II)	56	41	–	3	13
Arrests	38	28	–	3	6

Table 4.2 (continued)

	Total	Address or parcel	School	Tract or block group	Zip code or other
Arrests (juvenile)	28	19	–	3	6
Emergency (911) calls	16	13	–	3	–
Prisoner reentry					
Ex-offenders returning from prison	38	28	–	–	9
Ex-offenders returning from jail	19	13	–	–	6
Persons on probation/parole	28	25	–	–	3
Business/economy					
Business inventory (ES-202)	38	9	–	6	22
UI wage record	3	3	–	–	–
UI claimant file	3	3	–	–	–
Business inventory (Other)	47	31	–	–	16
Business licenses	19	19	–	–	–
Liquor licenses/stores	47	47	–	–	–
Property transactions/characteristics					
Property characteristics	69	69	–	–	–
Property sales (volumes, prices)	78	66	–	3	9
Property tax assessments	81	78	–	–	3
Tax delinquencies	44	44	–	–	–
Evictions	13	9	–	–	3
Vacant parcels	63	56	–	6	–
Foreclosures	78	63	–	6	9
Building permits	53	50	–	–	3
Demolitions	53	50	–	–	3
Housing code violations	47	44	–	–	3
Lead paint abatements	13	6	–	–	6
Water usage	9	9	–	–	–
Water shuts offs	13	13	–	–	–
Electric shutoffs	6	6	–	–	–
Other					
Voting records	38	31	–	–	6
Community referral calls	25	9	–	3	13

The table shows that the frequency of these holdings varies substantially across topics. For example, sizeable shares of the partners have small-area data on school enrollment and student proficiency scores (more than 90%); property tax assessments (81%); property sales (78%); part 1 crime rates (72%); and public housing (50%). On the other hand, fewer than 20% of the partners maintain small-area data on foster care; emergency department visits; S-CHIP recipiency; 911 calls; business licenses, evictions, and water shutoffs.

Nonetheless, Table 4.2 shows a remarkable expansion in data assembly over the past 15 years (Guernsey and Pettit, 2007). When NNIP started, the original partners could construct indicators on only a fraction of these topics (Kingsley, 1999). The increases took place in all topics in this table as more partners obtained the more

common data sources, like crime, and others broke new ground by expanding to data sources such as student attendance. Two aspects of this expansion, however, are particularly noteworthy. First, most sites now have considerable data on physical properties, whereas none had such data in 1995. This has become possible as cities digitized their maps of land parcels into mapping files of polygons or centroids. Address-to-parcel crosswalks also enabled linking parcel-level data files (such as assessors' files) with address-level files (such as code enforcement files).

The second notable advance is that many partners now obtain a considerable amount of address-based information on individual families (e.g., on births, student characteristics, public assistance recipiency). Such data enable extraordinarily useful analyses of changes in social conditions. However, unlike property data (generally a matter of public record), such information is highly confidential. To obtain it, NNIP partners must work out clear data-sharing agreements with the providers, in which they make strong commitments to preventing outsiders from accessing the data and to displaying summaries only in ways that absolutely prevent identification of individuals. The fact that so many more NNIP partners now routinely obtain such data is an indication that they have been very careful about honoring such agreements to date and that the providers have developed confidence they will continue to do so in the future.

National Files with Small-Area Data. One more advance in NNIP partners' data holdings is important. They have always been active users of US Census Bureau products, but in recent years a number of other federal agencies have begun making nationwide data files with small-area information available to the public (point data, census tracts, or zip codes). The best example is the annually updated data set on mortgage lending activity at the tract level, mandated by the Home Mortgage Disclosure Act (HMDA).[4] Others provide zip code level data: e.g., on summaries of income tax filings (Internal Revenue Service), on trends in characteristics of businesses and employment (Department of Commerce Surveys), and on characteristics of public schools (National Center for Educational Statistics).[5]

The problem with most of these files is that they are very large and complicated. NNIP partners and other local analysts seldom have the time or resources needed to make these files usable. To address this problem, the Urban Institute started a program in 2001 to clean and streamline a number of such files centrally and create simplified data sets with key indicators that will be easy to use locally.[6] At present, the Institute is providing excerpts from several such files to NNIP partners and plans to begin making them available to other users at all levels in the future.

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[4]The public can obtain HMDA files from the FFIEC (http://www.ffiec.gov/hmda). Also see Pettit and Droesch (2008).

[5]For IRS files see (http://www.irs.gov/taxstats/indtaxstats/article/0,,id=98123,00.html). Business pattern data are found at (http://www.census.gov/epcd/www/zbp_base.html). NCES data can be accessed at (http://www.nces.ed.gov/ccd/).

[6]This program was initiated to provide the content for the Fannie Mae Foundation's *DataPlace* web portal, but is continuing independently to provide more complete data to NNIP partners, researchers, and local planning organizations.

Making NNIP Data Available to the Public. The next sections of this chapter talk about how NNIP partners use their data holdings themselves but, as noted, all have made a commitment to making a substantial amount of their data available to the public directly. Methods of doing were varied and not very efficient when NNIP began, but the potential was transformed with the advent of the World Wide Web. In late 2009, all of the partners provided some data directly over their web sites (see Table 4.1).

Until recently, the typical approach allowed the user to look up fixed statistical profiles (tables in various formats) for neighborhoods of their choosing and prede-veloped (static) maps and charts for selected indicators. Web service technology is advancing very rapidly at this point, however. Some partners are already picking up on new ways to disseminate data in which the user can customize the form in which data are provided. This includes systems allowing users to dynamically generate maps and other graphics.

Developing and Applying Indicators to Advance Community Interests – Overview

How NNIP partners use their information is their most important defining character-istic. As noted earlier, their theme is *democratizing information*, which incorporates three principles. The first is the recognition that their primary job is to use data to support policy development and action agendas that will facilitate positive change, not just to create data and research for their own sake. The second is to give prior-ity to using data to improve conditions in distressed neighborhoods. The third is to give priority to projects where the NNIP partner helps relevant local stakeholders (at the community and citywide levels) use the data themselves (i.e., the NNIP part-ner brings the data to the stakeholder group and only coaches them as they think through the analyses and exhibits that will explain circumstances and make their point in a compelling way). This approach, where the stakeholders develop a jus-tified sense of "ownership" for the results, is considered more likely to yield real impacts than one where the NNIP partner does the analysis independently and then presents a finished product to the stakeholders.

In the previous section, we reviewed what the partners collect in the way of "data." For some projects, the raw data are what is needed. For example, if they are is trying to identify gaps in the pattern of child care services, knowing the absolute number of small children in each neighborhood is important.

For most of their work, however, the first step is to convert the data to form "indicators." As NNIP sees it, this involves (1) selecting specific measures that stakeholders care about (from the vast amount of information in their data ware-houses) and then (2) expressing them in a form that allows them to be meaningfully compared across time and locations. This requires creating some sort of a ratio. For example, using "8 violent crimes *per 100,000 population*" and "40% of house-holds paying an excessive amount of their income for housing," rather than absolute

numbers such as "125 total crimes" and "4,000 total households paying too much for housing."

There are three basic ways to apply indicators, and NNIP partners use all of them: (1) to comprehensively review change in the well-being of the community; (2) to assist in designing ways to address strategic issues; and (3) to assist in program evaluation.

1. Comprehensively Reviewing the Well-Being of the Community. In the *comprehensive* approach, indicators are selected from all topical domains the community regards as important to collectively track trends in the community's well-being or quality of life. This is the approach most often aspired to by community indicators initiatives – its basic purpose is to give the community an accurate sense of whether things have been getting better or worse across domains and, thereby, to help the community establish priorities for response.[7]

Several NNIP partners regularly employ the *comprehensive* approach. The most well-known example is the Boston Foundation's Boston Indicators Project which has prepared a series of five biennial reports with citywide and neighborhood-level indicators in 10 major categories (Boston Foundation, 2009). This project has been particularly noteworthy because of its success in engaging many segments of the society in indicator selection and review, and the highest levels of civic leadership in follow-through.

Another noteworthy example is the *Vital Signs* project of the Baltimore Neighborhood Indicators Alliance (BNIA) which has released five reports updating 40 indicators, all at the neighborhood level, since the baseline report in 2002 (Baltimore Neighborhood Indicators Alliance, 2002). Other partners that track the well-being of neighborhoods comprehensively are Dallas (the Institute for Urban Policy Research's Wholeness Index) and Seattle (Public Health-Seattle and King County and the Communities Count initiative).[8] Three other NNIP partners with comprehensive indicator reports – in Chattanooga, New Orleans, and Philadelphia – extend their coverage to their entire regions (Ochs Center for Metropolitan Studies, 2008; Liu & Plyer, 2009; Metropolitan Philadelphia Indicators Project at Temple University, 2009).

2. Addressing Strategic Issues. The second approach to using indicators, which we term the *strategic issue* approach, is in fact used much more frequently in NNIP. This normally employs a limited number of more detailed indicators focused around one topic, to help devise a strategy to respond to a particular problem or opportunity. Ideally, a comprehensive indicator review would be conducted first to identify which topics warranted the highest priority for follow-up. However, the strategic issue approach can be, and most often is, employed even when a comprehensive

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[7]For more examples of comprehensive community indicator initiatives outside of NNIP, see the Community Indicators Consortium (CIC) at http://www.communityindicators.net.

[8]See http://www.thewilliamsinstitute.org/ (Dallas) and http://www.communitiescount.org/ (Seattle).

indicator review has not been undertaken. Civic leaders regularly hear about emerging problems one by one; for example, from a newspaper article highlighting a large number of foreclosures in one part of town. If they feel the problem is serious, they may commission their local NNIP partner to use indicators in a strategic issue approach to try to find a way to address it.

Whether accompanied by a comprehensive indicator review or not, it is the strategic issue approach that is designed to have more direct influence to change things. The Urban Institute has written brief descriptions of dozens of these experiences in NNIP (Cowan, 2007; Kingsley, Coulton, Barndt, Sawicki, & Tatian, 1997), and others have been documented by other authors (Treuhaft & Kingsley, 2008). These efforts can be grouped in three categories:

a. Support of Improvement Initiatives for Individual Neighborhoods. The first relates to cases where NNIP partners work directly with neighborhood groups to help them plan improvement initiatives. These are extremely hard to describe since they do not follow any standard protocol. Sometimes the engagement begins with the NNIP partner bringing the group the information on recent trends for a large number of indicators (like a comprehensive indicator review for the individual neighborhood). Frequently, however, the group wants to dive into a specific issue and asks for data on a limited range of indicators that bear on the topic they have selected. For example (more complete descriptions are found in Cowan, 2007),

- A Milwaukee Boys and Girls club selecting a site for its new neighborhood facility in a different location than they had expected, after they analyzed data from the NNIP partner on the spatial pattern of children living in the area.
- In Nashville, helping the city and the Neighbors Reaching Out (NRO) Neighborhood Association to understand the potential demand for a home improvement subsidy program for elderly homeowners, and then producing a list of potentially eligible homeowners for notification.
- In Memphis, administrative data on foreclosure was paired with community-collected information on problem properties in the Hickory Hill neighborhood to identify how foreclosures were contributing to neighborhood blight. Through this, they were able to put pressure on owners of chronic problem properties and target limited city enforcement resources.

b. Citywide Issues – Simpler Presentations. Other analyses use neighborhood indicators to address citywide issues. These can be roughly divided into two groups according to the scope of the presentations involved. At one end of this spectrum, NNIP partners often produce brief "fact sheets" or present maps that highlight an issue to the public and are picked up by the press. Some of the most powerful of these have entailed simple displays of only a few indicators but have motivated important changes in citywide laws and practices (see more complete descriptions in Cowan (2007) and Kingsley et al. (1997)).

- Providence's laws regarding sales of tax-foreclosed properties were revised after solid data were presented showing that just one indicator had been shockingly

high for several years: the share of properties sold that were purchased by documented slumlords in the city.

- Camden's strategy for dealing with vacant properties was altered and given new impetus by maps showing the strong overlap between two indicators: vacancy rates and crime rates.
- Similarly, Milwaukee's city council had to make adjustments when maps showed that recently granted liquor licenses were concentrated in a few low-income neighborhoods and that crime was prevalent around those locations.

c. Citywide Issues – Full-Scale Cross-Neighborhood Issue Analyses. These are usually focused on just one topic but they normally involve analysis of a larger number of indicators, much more interaction with stakeholders and the preparation of a formal report. Two examples of work by individual partners are as follows:

- NNIP's Cleveland partner mapped the residences of welfare recipients needing employment against the locations of new entry-level job openings in the metropolitan area. Doing so dramatized a serious spatial mismatch that caught the attention of policy makers. The existence of the data and tools (e.g., the ability to forecast changes in commute times that would result from alternative changes in transit routes and schedules) and the prominence the analysis was given in the press were credited as key motivators for a substantial state grant for welfare-to-work planning that brought child care planners as well as transit planners to the table for the first time on this issue (Coulton, Leete, & Bania, 1999).
- NNIP's Philadelphia partner completed a project focused on neighborhood property conditions. To provide a basis for the Mayor's Neighborhood Transformation Initiative, they analyzed a vast amount of parcel-level data, identified six distinct types of neighborhood real estate markets and classified all city neighborhoods according to that typology. Each market type was associated with a package of appropriate city actions (i.e., the typology pointed out where it appeared most sensible to give priority to cleaning up vacant lots, demolishing versus rehabilitating row houses, subsidizing new construction, improving roads and other city infrastructure, etc.,). It would be unreasonable to expect any such comprehensive guidelines to be followed religiously. However, the guidance this framework provided has since had considerable influence on the actions of city agencies and nonprofits (The Reinvestment Fund, 2009).

This category also includes projects undertaken as a part of NNIP "cross-site initiatives" involving partners from several cities. In these cases, the partners conduct the analysis in a comparable manner and the hope is that the way the results play out in different contexts will be informative for national as well as local policy. Three examples are as follows:

- The Annie E. Casey Foundation and the National Institute of Justice sponsored a project in 12 NNIP cities to help address the formidable challenge created as large numbers of former prison inmates return to a relatively small number of

inner-city neighborhoods. In this project, the NNIP partners obtained data on the prison populations (descriptive information and likely place of return) to identify neighborhoods that were experiencing high concentrations of returning prisoners. They then used information in their systems on available services and other neighborhood conditions to examine the extent to which such communities were equipped to address the challenges that prisoner reentry creates and worked with local agencies to devise targeted responses (La Vigne, Cowan, Brazzell, 2006).[9]

- The Brookings Institution's Urban Markets Initiative funded a project in which NNIP partners in five cities used parcel-level data as a basis for developing "decision support tools" to help guide local work in community development. In one city, the data were used to bring government and advocate groups together to track affordable housing at risk of loss and coordinate responses. In another, the tool focused on packaging vacant city-owned properties for resale (based on better understanding the needs of various types of potential investors and relating these needs to property characteristics in the data system). In yet another, the tools helped the several CDCs operating in one neighborhood keep on top of market trends and approach site selection and implementation in a coordinated manner (Kingsley & Pettit, 2008).

- Another cross-site effort starting in 2007 (also supported by the Annie E. Casey Foundation) engaged eight NNIP partners in using indicators to assess risks to early childhood development and then, using reports on the results, to advocate for more coherent development of local school readiness systems. The approach is detailed in Bruner & Pettine, 2007, and the findings of the project will be documented in a final report (Kingsley & Hendey, 2010).

3. Serving as a Basis for Program Evaluation. The third major type of application for neighborhood indicators is in program evaluation. This was actually an important motivation for the development of NNIP systems in a number of cities initially; local foundations, in particular, wanting to have a better basis for judging how well their investments were paying off, and recognizing they needed a better understanding of trends in neighborhood outcomes to make that assessment.

Although the extent is not well documented, there is much anecdotal evidence to show that program funders use data from local NNIP systems frequently in their evaluations. In addition, NNIP partners have from time to time conducted independent program evaluations themselves. An important example here is the decade-long series of rigorous assessments of Cleveland's "Invest in Children Initiative" conducted by the Center on Urban Poverty and Community Development at Case Western Reserve University (Center on Urban Poverty and Community Development, 2009). Other examples include an evaluation of the Keep Engaging Youth (KEY) Truancy Reduction Pilot Project to improve school attendance in six Columbus city schools by Community Research Partners (Timko, Bunkley, &

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[9]For more information, see the Reentry Mapping Network web site at http://reentrymapping.org.

George, 2008) and a process evaluation of the "Parents are First Teachers" program by the Ochs Center for Metropolitan Studies (Robertson-Rehberg, 2010).

A significant new development in this area is the work of several partners in the evaluation of major comprehensive community development initiatives operated by the Local Initiatives Support Corporation (LISC) and sponsored by the John D. and Catherine T. MacArthur Foundation: the New Communities Program in Chicago (17 neighborhoods) and the Sustainable Communities Program (50 neighborhoods in 8 cities). The work entails the regular collection and review of a large number of indicators for the selected neighborhoods. The analytic work for New Communities, undertaken by NNIP's Chicago partner, the Metropolitan Chicago Information Center (MCIC), is yielding innovative approaches to data summarization and review (Taylor, 2010). The evaluation of Sustainable Communities has been designed and is being implemented by LISC's Research and Assessment office, but NNIP partners are playing leading roles in the four most advanced cities (Indianapolis, Milwaukee, Minneapolis–St. Paul, and Providence). This work is also yielding methodological innovations, including a fresh approach to selecting "comparison neighborhoods" (Walker, Winston, & Rankin, 2009).

Applying the Data to Advance Community Interests – Example Projects

The descriptions above are sufficient only to give the reader a sense of basic concepts and results. Below we explain three more examples in greater detail.

Community data system plays key role in planning recovery from Hurricane Katrina (New Orleans). Hurricane Katrina vastly compounded the usual challenges of providing reliable neighborhood-level data for community decision making in New Orleans, and in response, the Greater New Orleans Community Data Center (GNOCDC) evolved to fill strategic information gaps to help in the region's recovery efforts. Founded in 1997, the center has been a central resource of data and information about New Orleans' neighborhoods and the 10 surrounding parishes. GNOCDC was founded on the NNIP model, and focused initially on publishing a carefully selected set of indicators for each of New Orleans 73 neighborhoods drawing on Census 2000 data. Using staff expertise in user-centered information design, in 2001 GNOCDC presented this data in an easy-to-use web site with clear maps, profiles with quantitative and qualitative information describing their city neighborhoods, and spreadsheets for users to download the data.

As with all of New Orleans, Hurricane Katrina in August 2005 changed the trajectory of the organization. Two pieces of fortune positioned GNOCDC as the key information hub during the disaster – they had one data analyst on staff working remotely from California and their web site was hosted out of state. This enabled them to respond to the crisis even as the New Orleans-based staff evacuated the city. In the days and weeks after the storm, GNOCDC posted information to their web site about resources available to evacuees and their families. They also provided

maps and data to assist in understanding the impact of the storm from neighbor-hood demographic characteristics to elevation maps of the city. Their "Ask Allison" web-based technical assistance request service exploded with hundreds of requests for information from local residents, national news outlets, and federal government agencies.

As the recovery began, GNOCDC became the central place to go to for trustworthy and up-to-date information about the city and its neighborhoods, and their web traffic tripled from 5,000 unique monthly sessions before Katrina to 15,000 in 2006 after the storm. Their data and maps provided additional context for many aspects of the recovery effort. For example, GNOCDC produced maps that tracked childcare centers and schools in New Orleans as they reopened. This information served as a critical foundation for planning services for children, and was used by funders to more strategically deploy their resources where they were most needed.

The rapid changes in demographics and resources posed a unique challenge to GNOCDC; all data more than a few months old were essentially useless (Greater New Orleans Community Data Center, 2006, 2008). In response, GNOCDC staff began to create their own data sets and develop innovative indicators based on new sources of data. One major question was how many people were coming back to the area. The first population estimates were based on sample household surveys conducted by another local nonprofit, the Louisiana Public Health Institute, with technical assistance from the Centers for Disease Control and the Census Bureau. Survey-based estimates were developed at multiple points in time in 2005 and 2006. GNOCDC quickly realized that these estimates reflected only the population living in households and excluding those living in group quarters (dorms, nursing homes, etc.). As such they were comparable to pre-Katrina household population estimates but not total population estimates. They published a simple brief providing guidance about comparing these new numbers to the right reference numbers. This concept of comparability influenced the entire community's interpretation of these recent population estimates, and was incorporated into analyses published by the Louisiana Recovery Authority (which was responsible for disseminating $13.4 billion in federal funding), the Unified New Orleans Plan, and the creators of the estimates themselves – the Louisiana Public Health Institute.

Despite significant demand for frequently updated population estimates, surveys were costly and eventually survey efforts ended. GNOCDC began looking for an alternative public data source that could indicate population return on a frequent basis. One full year after the disaster, the post office resumed door-to-door mail delivery across the city. The Data Center analyzed the USPS counts of households actively receiving mail and determined that it served as a reasonable indicator of population recovery. They began publishing these counts monthly in 2007 with narrative updates and downloadable spreadsheets.

The Data Center also analyzed the Census Bureau's method for generating annual population estimates based primarily on changes of address listed in IRS tax forms. They found research that indicated this approach failed to track many population segments likely prevalent in post-Katrina New Orleans, such as undocu-mented workers and poorer residents. They alerted the mayor's office that the census

estimate for 2007 would likely be quite low. On March 20, 2008, the day the census released its estimate, GNOCDC and the mayor's office held a press conference to announce they would challenge it. The GNOCDC analysis based on US Postal Service, electric, and building permit data suggested that some 50,000 more people lived in New Orleans than estimated by the Census Bureau. After a review, the federal agency accepted their analysis and revised its population estimate, bringing in an estimated $45.6 million in additional federal funding to New Orleans. In October 2009, they repeated their analysis to challenge the Census Bureau's 2008 estimates (WDSU New Orleans, 2009).

In 2008, using the Valassis Residential and Business Database of addresses actively receiving mail, GNOCDC launched "Repopulation Indicators for New Orleans," a Google maps mash-up that enabled users to visualize patterns of density and repopulation across New Orleans, as well as block by block within neighborhoods.[10] (See Figs. 4.1 and 4.2.)

The number of households actively receiving mail was incorporated as an indicator in the *New Orleans Index*, a report co-published by GNOCDC and the Brookings Institution (Liu & Plyer, 2009).[11] This project more closely reflects the comprehensive indicator approach described earlier. Each report covered more than 50 indicators in the areas of demographics, economy, housing, and infrastructure. Through 2007, the index was published monthly. As changes slowed, in 2008, the index was published quarterly and semi-annually in 2009. The index provides a regular platform for local dialogue about the recovery progress and also ensures that the progress and setbacks of the New Orleans region get noticed by state and national audiences. All sectors of the community – government, nonprofits, private sector, and neighborhood groups – now rely on having a regularly updated set of indicators to benchmark the health of their city.

GNOCDC offers a dramatic example of how a city benefits from an existing information infrastructure. With a sound technical base and community-oriented mission, the organization was able to quickly adapt to fill emerging local information needs. The center continues to evolve as the city stabilizes from the disaster, and is committed to providing fresh and high-quality information to decision makers as the city rebuilds.

Analysis of neighborhood impacts of incarceration and reentry influences legislators and public agencies (Providence). The Providence Plan was founded in part to "make city neighborhoods safe and livable," and the organization has fulfilled that goal in the last decade by addressing public safety and prisoner reentry issues through remarkable partnerships with city, state, and nonprofit agencies. It was established in 1992 as a joint venture of the City of Providence, the State

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[10]The Valassis Residential and Business Database is an address-level listing of addressing actively receiving mail which we purchased in order to display these counts at the block level.

[11]Before teaming with GNOCDC, the Brookings Institution solely produced the Katrina Index as a monthly report from December 2005 to December 2006. The partnership began in January 2007, and the project was renamed the New Orleans Index in August of that year.

Fig. 4.1 GNOCDC web site displaying repopulation indicators for New Orleans. Source: Greater New Orleans Community Data Center web site, http://gnocdc.org/repopulation/index.html
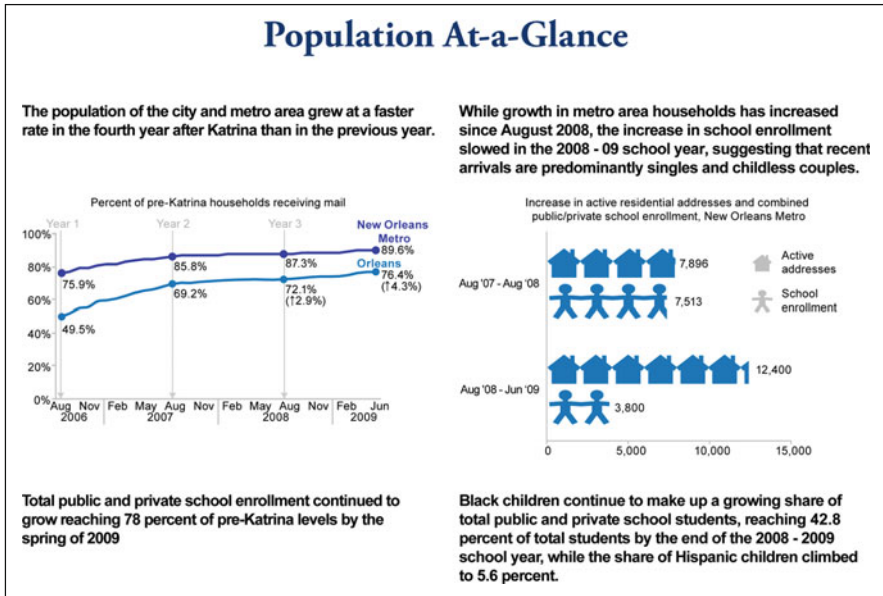
Fig. 4.2 Summary findings on population change in New Orleans parish and metropolitan area. Source: Liu and Plyer (2009)

of Rhode Island, the academic community, and the private sector to improve the economic and social well-being of the city, its residents, and its neighborhoods.

In 1999, The Providence Plan became a partner in the Annie E. Casey Foundation's Making Connections initiative, a place-based demonstration that aimed to improve the poor results for children and families by strengthening the communities in which they live. Through their Making Connections' community engagement efforts, the staff learned that reentry was a central issue in the lives of the families in the Making Connections neighborhoods. Having so many men from the low-income city neighborhoods cycling in and out of prison depleted the financial and social resources of the individual families and required more community services than were available to help returning prisoners navigate the difficulties of returning home. In 2002, this understanding led the Providence Plan to join the Reentry Mapping Network– the NNIP cross-site project described above (LaVigne et al., 2006). They joined in partnership with the Rhode Island Family Life Center, a nonprofit organization that aims to successfully reintegrate formerly incarcerated individuals, reduce recidivism, and stabilize families of ex-offenders.[12] The Providence Plan approached the Rhode Island Department of Corrections to access the data and began to provide ad hoc help to the Department in mapping the ex-offenders on probation and parole from state prisons.

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[12]The Rhode Island Family Life Center was renamed OpenDoors in January 2010.

The Providence Plan played a key role in working with the community-based Family Life Center and the Corrections Department, organizations often distrustful of each other. As with many other examples from NNIP, the new data that the Providence Plan provided helped to overcome institutional barriers and begin new conversations about how to help city residents and improve the quality of life in the neighborhoods. The collaboration of the three organizations has advanced the community understanding, legal framework, and public sector capacity to assist ex-offenders, their families, and their neighborhoods.

Building on the Making Connections resident engagement process, the Providence Plan and Family Life Center launched a community education campaign. They assembled community organizers and members of the faith community to present information about the number and racial breakdown of returning prisoners and to hear about which issues the community considered most pressing. In addition, they showed maps of the amount spent by the state to incarcerate people from each neighborhood. The analysis showed that the costs of the current incarceration practices were much higher than the costs of alternative sentencing and service programs advocated by members of the community.

Two major legislative campaigns were won with arguments bolstered by analysis of the incarceration and reentry indicators (Cowan, 2007). The first responded to the fact that people who had been convicted of felony drug distribution were ineligible to receive Family Independence Program (welfare) funds or Food Stamps at the time. The Rhode Island Family Life Center published a policy brief on the impact of this ban highlighting that the denial of these benefits represented not only a decrease in income for the formerly incarcerated parent, but a debilitating loss for the entire family (Family Life Center, 2004). Using data on the number of kids of sentenced individuals, the analysis estimated the number of children that would gain from a reinstatement of these benefits to formerly incarcerated people, and analyzed the associated cost to the state. The arguments and data proved powerful and convincing to state lawmakers as well as the public, and the legislature repealed the ban in 2004.

The second legal victory involved ex-felons' voting rights. Rhode Island law barred anyone with a felony conviction from voting until their entire sentence, including probation and parole, was complete. In 2004, the Family Life Center, again with support from The Providence Plan, published a brief with maps of the sentenced and supervised offender populations by neighborhood and race, which demonstrated the disproportionate effect of the ban on urban, minority communities (Keough & Clement, 2004). Local leaders and advocates worked with the Rhode Island General Assembly to have a measure placed on the ballot amending the state constitution to allow people with felony convictions to vote after their release from prison. Voters in Rhode Island approved the ballot measure in 2006, and an estimated 15,000 previously barred Rhode Islanders regained the right to vote.

In addition to progress in state law, Providence Plan's analysis of reentry indicators has also supported the planning and operations of the Department of Corrections. With federal funding provided by the Prison Rape Elimination Act, the Department leadership contracted with the Providence Plan in 2005 to analyze the location of returning prisoners in relation to the availability of services to assist

in reentry. The institutional relationship was reinforced when the Providence Plan began providing technical assistance to corrections' staff around GIS so the agency could better use its own data for planning and operations. The Providence Plan now provides regular analytic assistance in mapping the cost of incarceration by town and neighborhood (see Fig. 4.3). In 2009, Providence Plan and the Urban Institutes received a National Institutes of Justice grant to produce an open-source online system that maps people on probation using daily-updated information, along with related data such as service-provider locations and police districts (Lucht et al.,
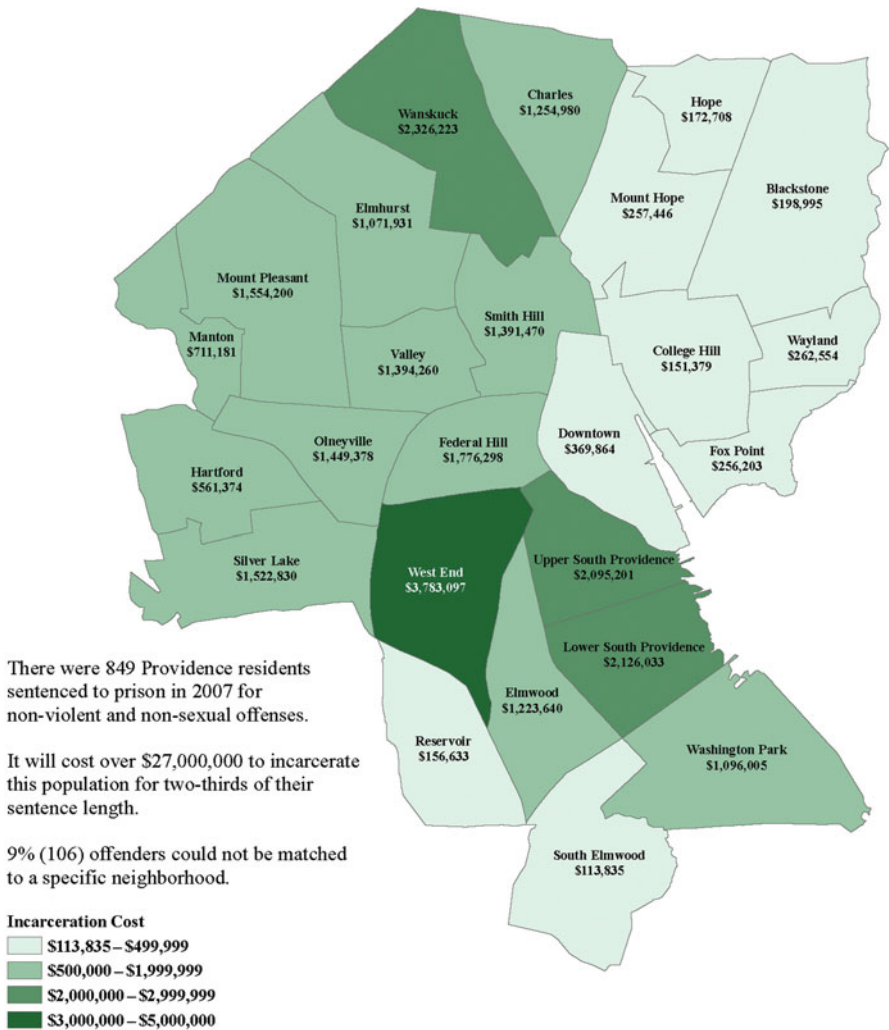

Fig. 4.3 Cost to incarcerate Providence's sentenced offenders (excluding violent and sexual offenders), 2008. Source: Providence Plan (2009)

Forthcoming). This Community Supervision Mapping System (CSMS) allows the probation officers to search the data easily, and produces easy-to-read maps, tables, and reports to help them in their day-to-day work. This example shows how strong partnerships among the data intermediary, government agencies, and nonprofit service and advocacy organizations can enhance a community's ability to address the critical issue of prisoner reentry to benefit both the returning offenders and the affected neighborhoods.

Investment in parcel data pays off in tackling foreclosed lender-owned properties (Cleveland). Case Western Reserve University's Center on Urban Poverty and Community Development was one of the founding partners of NNIP and has always been in the forefront of using technology to disseminate data to targeted audiences. Their Northeast Ohio Community and Neighborhood Data for Organizing (NEO CANDO) is a free web-based data system that allows users to access neighborhood-level data on a variety of social, economic, housing, and health-related conditions. Since 2005, the site has incorporated parcel-level data, including lot characteristics, assessed values, tax billing information, and property transfers.

Also beginning in 2005, the center had the opportunity to apply this wealth of information in support of Neighborhood Progress Inc (NPI – Cleveland's primary community development intermediary) in implementing its Strategic Investment Initiative (SII) in six targeted neighborhoods.[13] A staff member from the center joined the SII Land Assembly team, which would meet regularly to identify potential properties for new development and problem properties with signs of blight and worked with the team to assess implications for action. NEO CANDO information was presented about all of the properties in the neighborhood – maps and tables providing a host of relevant facts about properties such as, existing development plans, vacancy status, and various problem indicators (Fig. 4.4 provides one example). Analysis of the data at this level was critical for making sound selections of properties for acquisition and identifying those at risk of abandonment that demanded other forms of attention (Schramm & Hopkins, 2008).

This development work was well underway when the economic and housing markets stalled in late 2007. Since then, the Land Assembly Team has rebranded itself as the Neighborhood Stabilization Team. Utilizing the experience the center had in linking and interpreting property data prepared the team to address the difficult decisions that would have to be made about properties in response to the growing foreclosure crisis. Their efforts fall into three main areas: foreclosure prevention, foreclosure intervention, and foreclosure reclamation.

Data played a critical role in the community's ability to respond in all three areas, but the center's contributions to foreclosure reclamation stand out. This area focuses on informing the community response to REO (Real Estate Owned) properties – foreclosed properties where title has been transferred to banks, mortgage servicers, or government-sponsored enterprises. Cleveland faces enormous code enforcement

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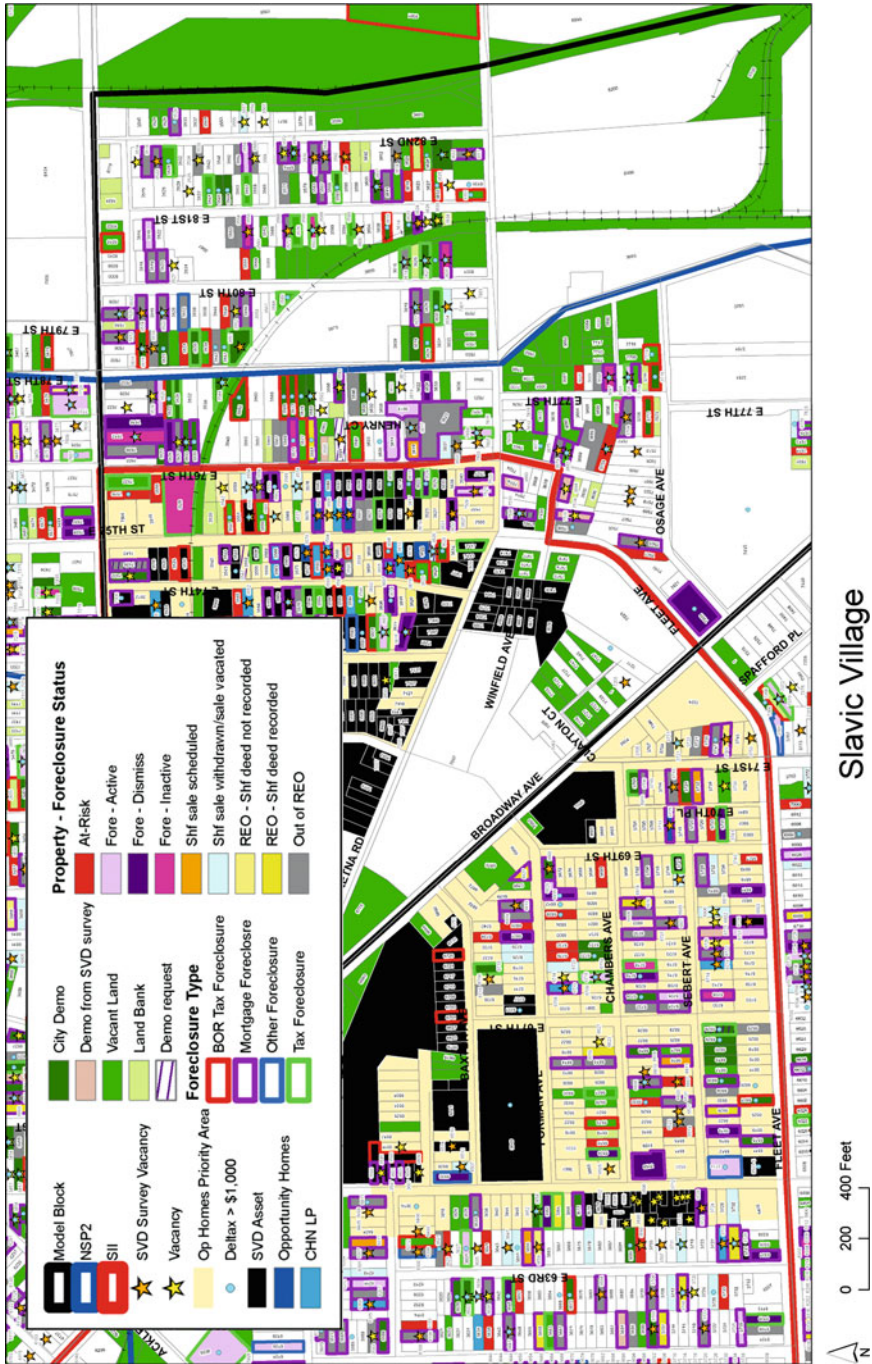[13]For more information about SII, see http://www.neighborhoodprogress.org/cnppsii.php.

Fig. 4.4 Land assembly team working map. Source: Center on Urban Poverty and Community Development, Case Western Reserve University, October 2010

Seller	Number of REO properties sold, $10,000 or less	Percent of total REO properties sold	REO properties sold by seller, all prices	Percent of REO properties sold, for $10,000 or less by seller
Deutsche Bank National Trust	486	18.59	1,089	44.63
Wells Fargo	304	11.63	771	39.43
Fannie Mae	239	9.14	982	24.34
U.S. Bank National Association	194	7.42	519	37.38
LaSalle Bank National Association	162	6.20	322	50.31
Bank of New York	112	4.28	404	27.72
JP Morgan Chase Bank	103	3.94	298	34.56
HSBC Bank	75	2.87	163	46.01
Homecoming Financial Network	73	2.79	173	42.20
Wachovia Bank	56	2.14	150	37.33
Total (top sellers)	1,804	69.00	4,871	62.46
Total REO properties sold	2,614		7,799	

Fig. 4.5 Top sellers of REO properties, Cuyahoga County, 2007–2008. Source: Cuyahoga County auditor transfer data from NEO CANDO, Center on Urban Poverty and Community Development, Mandel School of Applied Social Sciences, Case Western Reserve University. http://neocando.case.edu

challenges in dealing with these properties, many of which are later sold to out-of-town buyers and flippers, sold at distressed prices to investors, and even abandoned.

In late 2008, the center released a report documenting what happens to properties after sheriff's sale and REO ownership (Coulton, Schramm, & Hirsh, 2008). Between 2005 and 2008, the report showed the drastic increase in REO properties being sold at extremely low prices – $10,000 and often less (Fig. 4.5). It also listed the most frequent sellers and buyers of these properties; the price of properties in subsequent transactions; and information about the practices of some buyers and sellers of REOs. The typical practice following acquisition of an REO at a foreclosure sale was to board and secure the property and keep the grass cut, but not to make any repairs prior to selling the property.

The prevalence of REO properties began to impede the progress of SII neighborhood development. NPI staff found it extremely difficult to reach the bank representatives about purchasing key properties for rehab. In addition, distressed REOs were diminishing the marketability of other nearby properties under development. Attempts at informal discussions were unsuccessful, so NPI turned to the legal system (Schramm, 2009). In December 2008, the Cleveland Housing Renewal Project, a NPI subsidiary, filed a lawsuit against Wells Fargo Bank and Deutsche Bank alleging that the business practices of both banks in the post-foreclosure purchase, maintenance, and sale of residential properties acquired through sheriff's sales constituted a public nuisance. NEO CANDO provided additional analysis that linked records on each property, including the bank owner of the foreclosed property, tax delinquency, city demolitions, vacancy, mortgage data, property transfers, auctions, and foreclosures. The analysis quantified the REO inventory in SII areas and citywide, tracked the disposition activity, and revealed that a large share of these banks' REO properties were open, vandalized, or had obvious structural damage or

other significant defects.[14] From December 2008 to April 2009, Wells Fargo had disposed of 108 properties in Cleveland at an average price of $12,000, with 77 selling for less than the average amount.

In June 2009, Cleveland Housing Judge Raymond Pianka issued a preliminary injunction against Wells Fargo that required them to take the necessary actions on any substandard foreclosed property – whether through repairs or demolition – to comply with city codes. And in cases where the company wanted to sell property for less than $40,000, it had to first demonstrate that the property met city code. Wells Fargo appealed the action and the injunction has been stayed while the appeal is pending, but in the meantime, the bank has been required to post a $1,000,000 bond and ensure that all of its vacant structures are boarded and secured at all times. The case against Deutsch Bank has bounced between Federal Court and Housing Court and the final venue for this case is pending appeal in the Federal Court of Appeals. Clearly, the solid data and documentation from NEO CANDO was vital to progress on these cases.

While the lawsuits focus on the two top REO-holders, a new city of Cleveland initiative titled *Operation Prevent* aims at holding all banks and investors accountable for the condition of their properties. To support the project, the city and NEO CANDO developed an interface and data algorithms to alert stakeholders (such as code enforcement staff, housing agency staff, and community development corporations) of foreclosed properties that appear abandoned or are entering and leaving REO status at distressed prices.[15] An online site is also being developed to allow local community development corporations (CDCs) to input information about code violation and vacant homes, supplementing the resources of the stretched city staff.

The ongoing data and indicator development of the Center on Urban Poverty and Community Development is so effective because it has had long-term working relationships with strong public and nonprofit partners that are eager to incorporate indicators into their neighborhood development and foreclosure response decisions. The Cleveland community benefits through this combination of the center's analytic expertise with on-the-ground experience in community development and housing policy. And the CANDO infrastructure is in place to inform Cleveland residents through the current crisis and into whatever the next phase of the city's housing market may be.

The Work of the Partnership

Most of this chapter has been devoted to explaining what NNIP partners do locally. This section moves up a level to briefly describe what NNIP does as a partnership.

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[14] http://thatcreditunionblog.wordpress.com/2009/06/28/can-a-court-enjoin-a-lender-from-dumping-its-reos-court-of-appeals-to-decide/

[15] http://www.clevelandcitycouncil.org/Home/News/February42009/tabid/619/Default.aspx

A six-member Executive Committee, elected by and from the local partners, is central to planning the work of the network overall. The Urban Institute serves, in effect, as NNIP's "secretariat" and works closely with the Executive Committee in planning and implementing activities.

The network's most important mechanism for achieving its objectives is peer-to-peer learning implemented through two three-day face-to-face partnership meetings each year and active email correspondence and work group activities in between. However, the partnership also conducts other activities to advance the work in this field. Its overall agenda has five parts.

1. Informing Local Policy Initiatives. This is achieved through NNIP's "cross-site action initiatives," examples of which were provided earlier. These initiatives are applications of data designed to help address real local issues, but are implemented in a comparable manner in multiple NNIP cities so as to provide lessons that offer a sounder basis for national, as well as local, policy and practice. NNIP coordinates the work in the participating cities and then documents lessons and best practices to guide other cities interested in working on the topic. Topics to date have included welfare-to-work (Turner, Margery Austin, Mark Rubin, & Michelle DeLair, 1999), neighborhood public health (Pettit, Kingsley, & Coulton, 2003), and others that have been reviewed in more depth above: decision-support tools for community development, reintegrating returning ex-prisoners into society, early childhood development and school readiness, and local responses to the foreclosure crisis.

2. Developing Tools and Guides. This entails preparing a series of guidebooks, tools, and presentations that advance the state of the art in this field, and disseminating them over the web and through other channels.[16] Topics range from descriptions of promising practices developed in cross-site initiatives and projects of individual partners to technical guidebooks documenting available data sets and techniques related to analysis, display, and systems operation. There is currently a sizeable backlog of innovative practices and policy ideas that remain to be documented in this way and NNIP intends to address them as resources become available.

3. Strengthening Local Capacity: Developing Capacity in New Communities. NNIP has had very little funding for direct work to help nascent partners in new cities get started. Expansion normally takes place when NNIP staff are contacted by interested organizations that have heard about the basic NNIP approach via the web site or presentations that have been made, and are already in the process of building relevant capacity. NNIP staff then offer some coaching on the start-up process (most often by phone) and access to data sets and topical tools and guides. Candidates that are well along in development may be invited to attend semi-annual NNIP meetings. When the new group has made

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[16]See the NNIP site to access the tools and guides at http://www2.urban.org/nnip/publications.html

enough progress to meet NNIP requirements, it submits a formal application to join.

4. Strengthening Local Capacity: Services to an Expanding Network. This category includes some services available to staffs of NNIP partner organizations only: the semi-annual meetings and participation in cross-site initiatives, topical work groups and web chats. However, it also includes services available to broader audiences interested in this work as well. These include maintaining and updating the NNIP web site, an interactive email list-serve (NNIP News, now with 715 subscribers), and occasional conferences and webinars open to outside groups. Also, Urban Institute staff and NNIP partners make frequent presentations about the network and its activities to government agencies and at the conferences of various national and regional interest groups. Finally, as noted earlier, the Urban Institute continues to clean and streamline national data sets with data on small areas and make excerpts available to partners and others for local use.

5. Leadership in Building the Field. The job of building capacity and strengthening practice in this emerging field is sizeable. The task is not one NNIP could or should take on solely on its own. Rather, NNIP attempts catalyze a broader effort, partnering with a number of other national organizations whose missions revolve around the use of indicators and development of local capacity. For example, NNIP leaders have always been active participants in the Community Indicators Consortium and various committees of the State of the USA indicators project. Also, NNIP is now working closely with the Local Initiatives Support Corporation to find better ways to use indicators in the planning and evaluation of community development programs.[17]

Implications for National Policy

The future of this field appears promising. Natural forces (the growing desire of local decision makers for good neighborhood level data coupled with continuing improvements in the technology) have given it momentum, even though national efforts to facilitate the advance, by NNIP and others, have been comparatively modest. Still, these capacities are available to only a small fraction of America's localities at this point. Steps need to be taken to accelerate the pace of this development.

The federal government could help in several ways. First, it could make more of its internal data sets with small-area data available to the public, as it does for the HMDA, IRS, and other data sets, which the Urban Institute is already streamlining for local use. In fact, given the Obama administration's recent directives to further "open government," prospects look very good in this area (See Orzag (2009) and

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[17]For more information on the LISC Sustainable Communities program, see http://lisc.org/section/ourwork/sc.

the White House (2009), although it must be recognized that the implementation of this principle will not be easy given vested interests around current practices.

Second, federal action is likely to be required to secure the improvement and release at low cost of several types of data now held by private firms and sold at prices that are prohibitively expensive for most local users. Probably the most important example for the well-being of American communities at this time is data on the status of mortgages. If local stakeholders in most cities had the mortgage tracking capabilities developed at considerable cost by NNIP's Cleveland partner (discussed above), surely it would have a significant impact on their ability to address today's foreclosure crisis.

Finally, however, a way needs to be found for the federal government to support building local capacity to develop integrated data systems and use data effectively – support that would enhance the funding now being provided by local and national philanthropy. Most communities do not have these capabilities at all. In the cities that do have them, more resources are needed to assure sustainability and to allow intermediaries to pursue new ideas for creative, cost-saving applications – applications that could serve as valuable models for others. Resources for preparing and disseminating information on promising practices also need to be expanded.

Many players in Washington these days are voicing support for open information and data-driven decision making. But so far, this rhetoric does not adequately recognize the extent to which the day-to-day decisions that determine the quality of life in America's communities are made at the local level. Helping local stakeholders develop and use data effectively warrants higher priority.

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Chapter 5
A Sustainable Well-Being Initiative: Social Divisions and the Recovery Process in Minamata, Japan

Takayoshi Kusago

Abstract In Japan, national development strategy has been based on industrial development. Over the last 140 years Japan has shifted its economic structure from agriculture to industry and service sectors. However, this strategy has incurred costs as well as benefits. From the late 1950s to the 1980s, Minamata City, a small city in Kyushu, suffered the worst industrial pollution case caused by organic mercury in the world. Many residents came down with Minamata disease, a severe neurological syndrome, which ruined their lives socially, economically, and culturally, and created pervasive social divisions among local residents as well as discrimination by people outside the city. However, in 2008, Minamata City was chosen as one of the six leading environmental model cities in Japan. This chapter focuses on this dramatic turnaround by focusing on keys critical for this change: local leadership, government policy, citizen's actions, and Jimotogaku (a neighborhood study method).

Introduction

The pursuit of higher well-being has been the ultimate goal of national development, and industrialization strategy has played an important role in many of the modernization processes in the world. Modernization strategy is defined as a nation's economic growth through industrialization development. Modernization strategy first started and became popular in the UK, France, the United States, Germany, and Japan between the late nineteenth century and the twentieth century.

Modernization strategy has brought enormous progress to those countries, e.g., stable income increases, piped water provisions, transportation system development, access to schools, and provision of health services. As a result, key economic and social indicators have gone up, implying improvement in people's quality of life.

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However, modernization strategy has also incurred negative impact to society with the widening gap of income, weakening community ties, an increase in crimes, and environmental degradation. In particular, large-scale industrialization has caused massive depletion of natural resources for energy use and mass production. Also, it has generated industrial waste and damaged woods, mountains, rivers, lakes, and oceans. This environmental degradation has hit hard the local people's livelihood, especially those who live in rural communities where they have relied heavily on local land and water for their survival.

Japan improved its economic well-being by adapting an external development model under the name of modernization and industrialization. Economic development strategy has made Japan one of the richest nations in the world as evidenced by its per capita GDP from half a million yen in 1955 to more than 4 million yen in 2005. In Japan, industrial pollution became severe and pervasive during the years of spectacular economic growth and after. In the 1960s and the 1970s, four major pollution lawsuit cases were drawn over health problems caused by air pollution and water. contamination.

Minamata city, located on the Kyushu island of Japan, enjoyed this modernization strategy in the early stage of Japanese industrialization with the start of the Chisso Corporation established in 1908, a leading chemical company in Japan. People in Minamata were happy to have Chisso's fertilizer factory and had high expectations for better economic living conditions due to stable industrial jobs. Industrialization however, later caused Minamata disease, which is an organic mercury poisoning, between the 1950s and 1970s, and many people in Minamata have suffered since then. With Minamata disease, people had to change their livelihood drastically and life became a living hell for the sufferers of the disease and even people without the disease faced severe discrimination in Japanese society in Minamata. Social divisions and conflicts were pervasive in Minamata for many years.

However, in 2008, Minamata was chosen to be an environmental model city among six other cities by the central government. Once it was known as the worst pollution case in Japanese history and perhaps one of the worst cases in the world, and now it is acknowledged as a city leading in environmental management. How was this accomplished in Minamata?

Pollution problems are not limited to Japan's national boundaries, but have been widespread across the globe mainly because of the adaptation of industrial development and the globalization of the economy. Multinationals have competed against each other to seek natural resources from the Amazon, from rainforests in Kalimantan, the Indonesian portion of the island of Borneo, and from mining areas on the African continent, for example. Moreover, the BRIC countries (Brazil, Russia, India, and China) have rapidly industrialized in a way similar to the economic boom experienced by the United States and Japan, but with little attention to the negative impact from industrialization.

This change is not a local interest; rather, it is a common concern for all of us who have followed industrialization and modernization for decades and have faced issues of environmental degradation. We have witnessed towns and communities

lose their social cohesion and community integrity caused by resource depletion or pollution, and shattering. There are pressing needs to find a clue to revitalize communities once hard hit by negative impact through modern economic development. In other words, one of the biggest challenges in development is to find a way to recover a good balance between economic development and environmental preservation. The communities of Minamata, which went through the negative outcome of modern development as social division in the community, turned the situation around with local leadership and a partnership among the government, sufferers, and ordinary people. Thus, this chapter presents a real case in which we can learn how declining communities might improve overall community-based well-being through people's actions at the community level. First, we look at how Japanese economic development was achieved for the last 60 years in the post-World War II period. Second, we look into the weaknesses of the industrialization model and discuss the importance of a people-centered endogenous development model based on people's own initiatives, where enthusiasm and collaboration are the thrust of creative community development (Tsurumi, 1996). Third, we introduce the case of Minamata from its industrial development to the organic mercury poisoning problem. Fourth, we look at key points for the turnaround of Minamata community development in the 1990s. Last, we discuss local innovation based on local vision, new public policies, and a unique community development method in Minamata, Japan called, "Jimotogaku".[1] We conclude with some implications from this case study about community development and restoration after severe external shocks.

Background

Japanese Economic Prosperity Through Industrial Development

After the Meiji restoration, under the Emperor's regime, which was highly centralized and controlled by elite bureaucrats and military forces, Japan envisioned its national development in relation to catching up with the West. However, World War II devastated the Japanese homeland at the cost of many people's lives. In the post-World War II period, however, the Japanese enjoyed one of the world's highest levels of economic growth, which was orchestrated by the Japanese government and achieved through the hard work of Japanese companies and their employees. In 1945, reconstruction of Japan started with the Allied Powers' economic policy, which included disbandment of financial cliques (*zaibatsu*), such as Mitsubishi and Mitsui, agricultural land reform, and implementation of tight financial policy. After

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[1] "Jimotogaku" is a community development approach born in the local communities of Minamata in the mid-1990s. Jimotogaku focuses on existing local resources, including nature, history, customs, and people, and facilitates the community people's initiative to utilize those resources. The main principle of Jimotogaku is "Stop asking for what we do not have, let us start from finding out what we have." Jimotogaku builds confidence in community lifestyles by enhancing autonomy in design and implementation of local development (Yoshimoto, 1995, 2008).

Japan regained its independence in 1952, the Japanese government struggled with its economic reconstruction. In the late 1950s, Japan finally experienced an economic boom with higher industrial production and in 1956, the government declared that the post-war reconstruction period was almost over (Nakamura, 1985). To accelerate reconstruction of the economy, Japan became a member of the World Bank and the IMF in 1952, and subsequently received loans from the World Bank to finance infrastructure development such as dams, roads, and railways. In this manner, Japan got on track to growing its economy rapidly in the 1950s and 1960s. With this economic recovery and growth, Japanese people were viewed as improving their economic and social standards of living.

In the 1970s, Europeans described Japanese workers as "economic animals" in the context of warning the world about Japanese economic power. In fact, that description is not far from the mark. The majority of Japanese migrated from rural to urban areas to obtain a job in the high-growth manufacturing sector. They worked long hours, and perhaps, as a result of this hard work, their economic well-being improved with the sharp economic growth of the 1960s and 1970s.

Wages tended to rise, and people were able to build homes and to send their children to secondary school and even university, which were viewed in the pre-war period as educational institutions largely accessible only to the elite. The majority more or less benefited from this nationwide economic growth. In fact, during Japan's rapid economic growth from the 1960s to the early 1980s, the wage level of Japanese workers, on average, increased every year and they enjoyed growing purchasing power. If we look at Japan's economic performance (GDP), as shown in Fig. 5.1, we see that it achieved extraordinary high economic growth after World War II. Some academics and policymakers in the West described Japan's high economic growth in the 1960s and 1970s as a "miracle." With this, many Japanese families were able
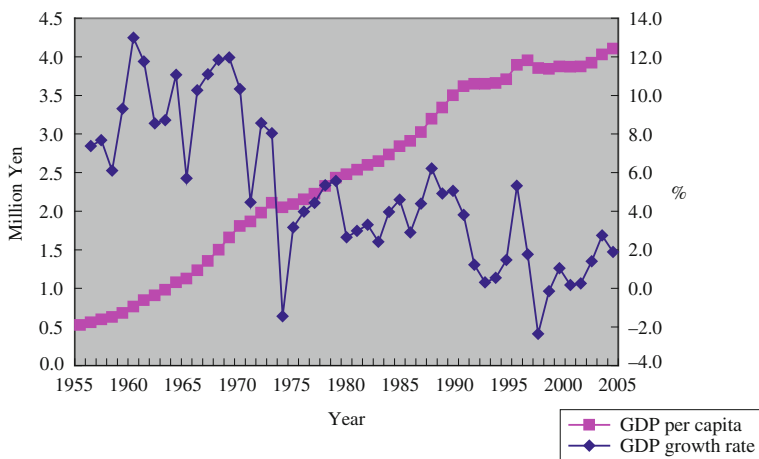

Fig. 5.1 Japan's economic growth: GDP per capita, and GDP growth rate (Data source: National Accounts, Economic and Social Research Institute, Cabinet Office)

to build their own houses although the houses were smaller in size than most found in other developed countries. They also sent their children to secondary schools, and enjoyed a longer life expectancy partly because of the Japanese public universal health care system created with an increase in government tax revenues. School enrollment rates in Japan improved dramatically in a short time, gaining more than 40% in high school enrollment rates from 1955 to 1975, with the rate reaching closer to 100% in 2005. Similarly, the enrollment rate for university had also moved upwards, and the rate, less than 10% in 1955, reached more than 50% in 2005. The health of the Japanese also improved. Soon after the war ended, life expectancy was merely 50 years for men and women (50.1 years for men and 53.9 years for women in 1947), an age far exceeded and one of the longest in the world now (78.6 years for men and 85.5 years for women in 2005). One can see that the Japanese have made great progress and gained both economic and social well-being during the post-World War II era. However, in the post-World War II period, although the Japanese managed to gain economic well-being through higher economic growth performance, serious damage was done to both the living environment and natural environment in Japan due to industrialization from the 1950s on (Kusago, 2007). In the early stage of high economic growth in Japan, factory workers suffered dust and airborne diseases. In the 1960s and on, area-wide pollution problems were identified across the country due to the expansion of production in industrial areas. Four major pollution issues, including the organic mercury pollution that led to the Minamata disease outbreak, the cadmium pollution determined as the cause of the itai-itai (pain–pain) malady, and Yokkaichi asthma degraded the health of the local people and, more importantly, damaged their own natural living environment, which had been the base of their communities (Ui, 1992).

Endogenous Community Development

Modernization has long been equated with Westernization. Many countries in Asian, African, and Latin American regions applied an industrial development model originally started in the UK, the United States, France, and other European countries. With the application of the borrowed or exogenous development models, most countries faced some sort of tension between the imported development model, which consisted of advanced science and industrial technology, and the native models, which used local-based technology, social structure, and local values and beliefs (Tsurumi,[2] 1979). In 1975, the Dag Hammarskjöld Foundation, a Swedish foundation, published a book entitled, *Another Development: Approaches and Strategies* (Nerfin, M. (Ed.), 1977). This book discusses how endogenous development and

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[2]In Japan, a sociologist named Kazuko Tsurumi, who was educated at Princeton, studied society from the perspective of social structure throughout her career (Tsurumi, 1979, 1996). She was very interested in development and change in societies, including in Japan. Among many themes, modernization and local development became her strongest areas of research.

self-reliance are needed to design a development alternative to the modernization model of the West. Tsurumi (1996) defined her endogenous development concept by illustrating how original creativity is always found locally. Her endogenous development model shows how local people and local institutions should design, carry out, and adjust their own development path, which will attain a sustainable livelihood in the long run at the community level. The question remains, however, how could such endogenous development be possible long after the exogenous development models have been applied?

Case Study

Minamata's Struggle and Recovery as Endogenous Development

As explained in the previous section, Japan has been successful in its economic development after the Meiji Restoration. MinamataCity (Minamata hereafter) is a small city, with a population size of 27,697,[3] located in Kumamoto prefecture, on the western side of Kyushu Island. It has fishing communities and mountain communities. This section details Minamata's case in its modernization path over the last century.

National Industrialization Strategy and Minamata Disease Breakout

The development of Minamata started as a part of the aforementioned national modernization strategy. In 1908, Nippon Chisso Hiryo Corporation built its factory in Minamata. This company was a frontrunner in the chemical industry in Japan. When the factory was established, people in Minamata had high expectations and hopes for the modernization of the local economy and for the economic well-being of its citizens. With this factory, Minamata was one of the first towns in Kyushu to have electricity supplied. In 1932, the Chisso Corporation began producing acetaldehyde compound acetic acid in its facilities, and in 1941, it started the first production of vinyl chloride in Japan. The city's population grew in size as the company expanded. After World War II, this factory recovered its production capacity and led in the reconstruction of national economic development. However, this economic success changed with the official discovery of Minamata disease in 1956. The number of people who suffered severe damage to their brains and nervous systems rose in the fishing communities of Minamata. Many died of the acute symptoms of Minamata disease, and others suffered health problems throughout their lives. At first, the cause of the disease was unknown, but was suspected to

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[3]The population size of 27,697 is as of June 2010. http://www.minamatacity.jp/ Accessed on 15 July 2010.

be some kind of epidemic; soon, however, the disease was found to be noninfectious. Until the cause was proven, the patients were confined to isolation wards in hospitals and, in some severe cases, patients were transferred to insane asylums. Medical investigation revealed that the cause of the disease was ultimately identified as mercury metal in the effluents from the Chisso factory into Minamata Bay (Harada, 2004). The mercury turned into organic mercury while it was in the ocean and reacted chemically (and adversely) with oxygen in the air. Through the food chain, before the disease hit human beings, the fish of Minamata Bay began to float on the surface and cats began acting strangely. The number of patients increased; however, these patients were forced to go through very difficult lives both physically and mentally. Since it took more than 10 years for the central government to recognize officially that the industrial pollution was caused by Chisso, these patients had been left behind without support from the company and the government for many years. People with Minamata disease were often discriminated against, even by their own relatives and friends within the community, and this contributed to the victims' worsening mental state. This was partly because the presence of the Chisso Corporation in Minamata was highly significant economically in the local community, and many local residents, who heavily relied on Chisso to maintain their economic livelihoods were afraid of economic loss because of the Minamata disease cases. Therefore, those who suffered with the disease were often not supported medically, socially, economically, or mentally. Thus, some people, who were aware of their bad physical conditions, did not reveal their problems to avoid ostracism. For those who suffered and identified themselves as having Minamata disease, their livelihoods decreased and they faced severe discrimination by their fellow community people. Some patients and their family members were both verbally and physically abused by those who were once good friends in the same neighborhood.

Although the discovery of the Minamata disease was made in 1956, the wastewater discharge did not stop immediately. Rather, the Chisso Corporation changed the location of its effluent outlet to continue to discharge the mercury after it was used as a catalyst for the carbide chemical process in the plant. The production of the acetaldehyde compound continued in 1968 when the government officially recognized the cause as the effluents of the Chisso plant. The government did not acknowledge the cause before 1968 because the Chisso Corporation opened its new factory in Chiba-prefecture with new production technology based on petroleum, not on carbide. The old technology was no longer needed for the company and the official acceptance of Minamata disease did not hurt the national industrial development, which depended on Minamata factory's products. This inaction of the government toward the Minamata disease patients incurred enormous costs for people in Minamata, and increased the coverage area of the Minamata disease by the change of the effluents to another location.

In 1969, the Minamata patients filed the first lawsuit against Chisso Corporation, and they won the case in 1973. In the 1970s, a series of lawsuits were started and the conflicts between the patient groups and the Chisso Corporation became extremely tense. Divisions among the patients also arose between those who were

compensated and those who were not. The community's overall cohesion and social integration were severely hampered with the spread of Minamata disease. Even within families where some family members worked for the Chisso factory while other members suffered the symptoms of the disease, conflicts became rampant and serious. There were many people who did not join the lawsuits as victims of the disease to avoid charges that would accrue to Chisso, which provided their families stable income through the jobs. Within communities, divisions also occurred between local agricultural producers and the Minamata disease patients because the producers claimed that the loss of their sales was due to the negative image toward Minamata products in general.

With central and prefecture governments indifferent toward the Minamata disease sufferers in the 1950s and 1960s, these social divisions became severe and pervasive (Fig. 5.2). Besides the worsening livelihood of the diseased patients, people in Minamata had a social stigma in the entire Japanese society. For example, passengers on trains that went through Minamata pulled shut the windows once the trains entered Minamata. Marriages were also broken off sometimes because a person came from Minamata. Thus, Minamata people tended not to reveal where they came from. They mentioned only which prefecture they came from. Minamata disease had a profoundly negative effect over people's livelihood and over communities in Minamata.
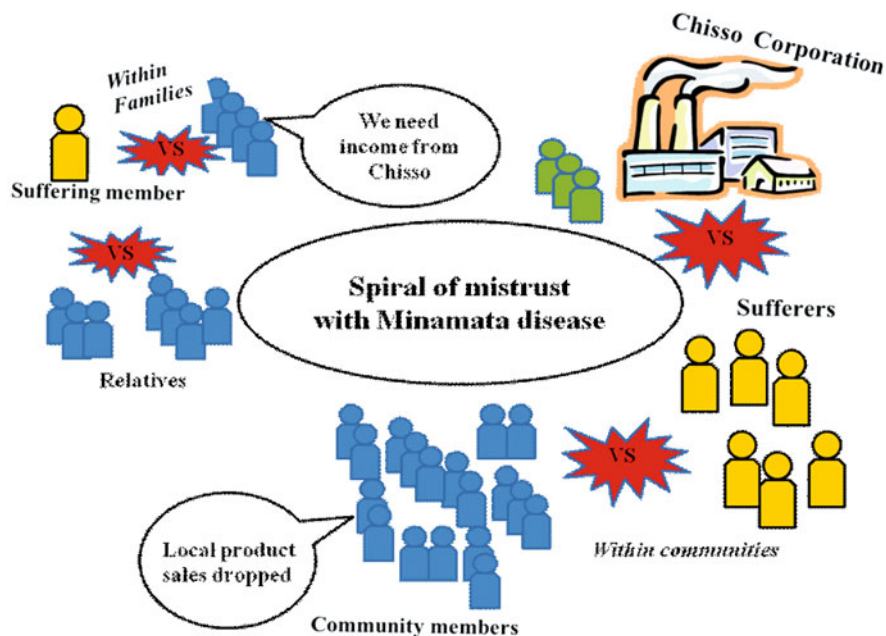
Fig. 5.2 Social divisions and conflicts in Minamata

Keys for Community Restoration Through People-Driven Initiatives and Public–Private Partnerships in Minamata

For more than 40 years of struggle over Minamata disease between the people affected by the disease and the Chisso Corporation, and between the affected and their neighbors, social divisions became apparent and pervasive in Minamata, which deteriorated people's well-being both physically and mentally.

In 1990, when the central government's dredging and reclaim land operation of the seabed was contaminated by the organic mercury in Minamata Bay, a citizen's group was formed to think of the future of the Minamata community. This group, called Yorokai Minamata, started its own community survey to identify local resources ranging from natural environments, traditions, culture, local products, and style of local livelihood, for example. This group produced local resource maps and they came to understand how rich the local resources in Minamata's communities were in the mountainside and along the sea and they concluded that Minamata should be revived as a model environmental city (Yoshimoto, 1995). This citizen's initiative received momentum from the public sector when Masazumi Yoshii, who was a member of the Minamata City Council for many years, was elected as Mayor in 1994. Yoshii changed the local government's attitude and action toward the Minamata disease sufferers by bringing in a bottom-up approach in public administration, which was well explained in the speech he delivered.

On May 1, 1994, Yoshii delivered a historic speech at the memorial ceremony of the Minamata disease sufferers. His speech offered a formal apology from the Minamata City government toward the Minamata disease patients for its lack of support to them in the last 40 years and declared the vision of a new Minamata, called the "Moyainaoshi Movement" to be created with a spirit of mutual helpfulness characterized by collaborative action among the victims of the disease, people without the disease, and the local government, to rebuild social ties of the Minamata communities. After 1994, Minamata moved forward to mend its social divisions within the communities and to advance people-driven community development. Yoshii took action to establish communication with the groups of the Minamata disease patients – who were separated into several groups and did not get along well with each other because of the gap in the severity of the disease's symptoms. Yoshii also negotiated for the central government and the prefectural government to finalize the compensation for all of the Minamata disease patients. He managed to orchestrate a universal solution for the Minamata disease patients without regard to the level of their individual symptoms. In addition to the leadership by Yoshii, since 1994, the government and the local people have also taken action toward well-being and sustainable development for the people of Minamata. Likewise, the relationship between the local people and nature itself has also changed.

Key 1: Local Leadership and a Vision for a Model Environmental City

In 1992, the Minamata City office declared that they would construct a model environmental city by changing its development path from fast-paced development and high productivity to an environmentally friendly path that also showed respect for the ecosystems of the area. This declaration was later given real substance within the city's programs, people's actions, and the local creativity that was on hand. What follows is an excerpt from the declaration by then Minamata Mayor Toshihisa Okada:

> Learning from this tragic experience, we in the City of Minamata are determined to construct a model environmental city that respects natural ecosystems. We are also determined to spread the lessons we have learned from Minamata disease all over the world. With the firm resolution that we will never allow any tragedy like the Minamata incident to occur again, we have decided to carry out the following activities and to share the results with people in Japan and all over the world.
>
> 1. Passing the lessons learned from Minamata disease down to the next generation.
> 2. Promoting relief measures for Minamata disease victims and reconciliation among the victims and local residents.
> 3. Encouraging changes to industrial activities to protect people and all other living things in cyclical ecosystems
>
> (Minamata City Website: http://www.minamatacity.jp/eng/mec/declaration2.htm# Accessed on 30 July 2010).

Setting a clear goal for the Minamata community through a local people-government partnership increased the number of people who were aware of a change from divisiveness and conflict in the community to collaboration. After all, the city of Minamata has chartered its revitalization as shown in Fig. 5.3.
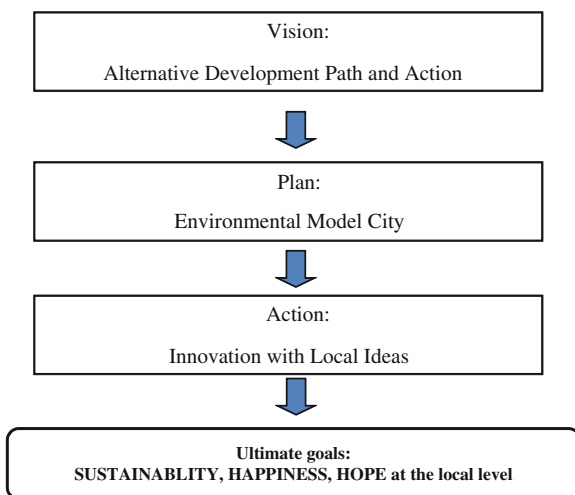
Fig. 5.3 Minamata's endogenous development path

Vision:
Alternative Development Path and Action

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Plan:
Environmental Model City

↓

Action:
Innovation with Local Ideas

↓

**Ultimate goals:
SUSTAINABLITY, HAPPINESS, HOPE at the local level**

Key 2: Government Policy – Environmental Meister

Minamata designed the Environmental Meister Program based on Germany's Meister System, and implemented it in 1998. This program offers certification to those producers or artisans who use environmentally sensitive production techniques and methods. The idea is to promote the making of products that are safe, cause no concerns, and are both environment and health conscious. Certification has been granted to the producers of pesticide-free rice, tea, mandarin oranges, vegetables, and other products like sardines without preservatives through teachers (Meisters). Twenty-nine people are certified and active as environmental Meisters in the city.[4] To be qualified as a Meister, six criteria are necessary:

(1) Have produced certain products, which are safe for the environment and health, for at least 5 years;
(2) Experience making products that are safe for the environment and health, by using natural materials and avoiding chemical substances, etc.;
(3) Have certain knowledge, experience, and techniques related to making products that are safe for the environment and health;
(4) Involve in activities related to regional environmental problems and environmental conservation;
(5) Have certain knowledge related to environmental problems and conservation;
(6) Have certain knowledge of the problems attributed to environmental pollution including Minamata disease.

This Meister program has changed people's perception about organic farmers, who were formerly branded as out of the ordinary. With certification, the sales of local organic products have increased, and confidence over the products among local farmers has gone up. The city government has designed this Meister program to promote the city's vision to be a model environmental city. Currently, other cities and towns in Japan have also adopted this program.

Key 3: Citizen's Actions for a New Development Path – Women's Waste Reduction Groups

The new direction taken after 1994 by the Minamata City office influenced local residents to engage in rebuilding their community through their own grassroots actions. In 1993, Minamata started its ambitious garbage-sorting program by sorting garbage into 20 different types of garbage. However, under the new garbage-sorting program and collection scheme, the total quantity of the garbage collected gradually stagnated. In 1997, a women's group was formed to solve this problem, and this group

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[4]This number is obtained from the Minamata city website. http://www.minamatacity.jp/jpn/kankyo_etc/kankyo/kankyo_Meister.htm. Accessed on 30 July 2010.

contributed to the reduction of garbage in Minamata. The group members analyzed the root cause of the garbage problem and found out that the styrofoam trays used by stores under fruits and other products caused a serious garbage problem. They surveyed carefully the use of the trays and vinyl bags at retail shops in the city, and with these survey findings the group negotiated with major retail shops to abolish the trays. In addition, the women's groups started distributing cloth shopping bags to all of the city residents to reduce the use of vinyl shopping bags given by the retail shops. Furthermore, the women introduced the eco-shop, which has promoted conservation of resources, reduction in the volume of waste, recycling, the sale of eco-friendly commodities, and the conservation of energy. This people's initiative contributed to making Minamata a model environmental city in Japan.

Key 4: Jimotogaku, Neighborhood Study Method, and the Practice of Jimotogaku

Minamata has both fishing communities and mountain communities. While people in fishing communities have suffered both economically and socially from Minamata disease for longer than 50 years, people in the mountain communities have not suffered much from the disease. However, mountain communities have faced other problems incurred by modernization strategy. This strategy has caused urbanization of the society mainly because the number of jobs in modern sectors is overwhelmingly generated in urban or semi-urban areas. Thus, those who seek jobs, especially those who are young, tend to move to big cities like Tokyo, Osaka, or Fukuoka. Mountain communities in Minamata have faced this issue and the number of local residents has declined for years. The local residents in those communities have long accepted the demise of their communities as the "fate" of rural communities in the course of modern development.

Tetsuro Yoshimoto, a former city officer in Minamata, questioned himself over the demise of livelihood in the once-beautiful communities such as in Minamata. Also, he was aware that mountain communities could be revitalized if the city of Minamata could be regarded as vital through Moyainaoshi. Yoshimoto saw Minamata as an eco-system centering at the Minamata River flowing from the mountain communities to the fishing area.

Yoshimoto implemented his idea to stimulate the local people's mindset regarding the resources they possess in their own local communities. He brought visitors from mostly Minamata to the mountain communities, and asked the local people to guide them. Those who visited the communities enjoyed their visits to the rural communities and were impressed with the beautiful landscape and uniqueness of the communities' charming local way of life. The visitors praised rural living and asked local people about their communities and lifestyles. The local people who guided the visitors were surprised to learn that those visitors from urban areas had "positive impressions" about their local communities and became interested in local resources, traditions, and the culture of their own village communities. Previously,

the local people had felt old-fashioned and had little confidence or pride. However, after they started guiding visitors from outside, they gradually understood that they had not been left behind, thus realizing their potential to develop their communities with local resources and ideas to attract visitors.

One rural community, Kagumeishi, started the first living-village Museum of Kagumeishi as a community business. This museum is at the core of the vision of Jimotogaku because it is built on the idea of learning from local communities. Jimotogaku has empowered local women as well. One women's group was formed voluntarily by those women who had worked on the local guidebook for visitors, and this group started a food-catering business by applying a philosophy of local production for local consumption. Also, when teachers learned of the attachment of the local people toward their folk stories, local music, and dance, the local primary school wrote a script for a school play about the history of the community. To practise the script, the elderly locals taught primary school students how to sing local songs and dance. The Jimotogaku method has served as a *catalyst* for local residents to be aware of their own valuable resources and to start thinking of the use of their resources to improve their own well-being. Kagumeishi (an area in the mountains) received the highest award in 2005 from the central government for having the best practices to revive its local community. Currently, there are four communities applying the Jimotogaku method in Minamata, and this method has been spreading in rural communities across Japan (Yoshimoto, 2008).

Conclusion

This chapter has illustrated how conventional development contributed not only to strengthening economic prosperity and the economic well-being of the Japanese people in general, but also to causing some negative impact on people's well-being. Economic development and the economic problems of Minamata as a case study have been presented in detail from a historical point of view. Next, social divisions and the ill-being of people in Minamata have been highlighted as a result of Minamata disease and its relation to the costs of conventional industrial growth. This chapter has detailed how the once devastated community has restored social bonds and capital in and after the 1990s.

This chapter has discussed endogenous development as an alternative development model to the economic growth model. Tsurumi's concept shares common values with comprehensive well-being enhancement initiatives and sustainable/balanced development approaches. We have also looked at the highs and lows of development in Minamata where the endogenous development model has been put into place over the last two decades. Minamata first pursued its well-being based on growth-oriented development with technology from outside the country and capital outside the city.

First, in terms of equitable and equal socioeconomic development, Minamata has envisioned its social inclusion as the core of its reconstruction and recovery. Second,

in terms of environmental conservation, Minamata has set its vision as a model environmental city restored after the devastation of its people, their environment, and economic loss. Third, to promote cultural and spiritual heritage, Jimotogaku and the living museum have made local people aware and respectful of their own local culture, history, and traditions, which revitalized positive social relationships in the communities. Fourth, for good governance, Minamata's new development path was initiated under an excellent leader, Yoshii, and his staff at city hall have taken concrete actions toward the well-being of the communities previously hit hard by Minamata disease.

Despair is often felt when we witness catastrophic impact of the pursuit of material wealth by multinationals and entities in the financial sector. However, as the Minamata case shows, Minamata City, which was once a beneficiary of industrial-based economic growth, was also a victim of it. Nonetheless, there is hope again at the community and neighborhood levels of redesigning one's livelihood and pursuing a balanced well-being.

Finally, the national government's commitment to serve the enhancement of the well-being of local people in a sustainable way has been important to the community. In this context, policy measures, including indicator development, need to be thoroughly researched. Minamata disease or organic mercury poisoning problems are far more pervasive than one imagines in the world, and affect native ethnic groups in Canada, ethnic minority communities in Amazonia, factory workers in China, and farmers in the United States (Harada, 1995). Thus, the Minamata case should serve as a lesson to other countries and their communities who indiscriminately use conventional development methods that often exploit the local communities. Locally grown sustainable community development action is also essential in preserving the well-being of communities.

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Chapter 6
The American Human Development Index: Results from Mississippi and Louisiana

Sarah Burd-Sharps, Patrick Nolan Guyer, Ted Lechterman, and Kristen Lewis

Abstract The American Human Development Report is an application of the conceptual framework pioneered by Mahbub ul Haq, Amartya Sen, and others to look at human welfare more broadly than traditional measures of economic growth. It includes a Human Development Index, a composite measurement of well-being and opportunity comprised of health, education, and income indicators. Human development reports have now been adapted for over 160 regions around the world, where they have been embraced as critical benchmarks for human progress. But the American Human Development Report is the first to apply a human development index to an affluent-country context. Just as the global Human Development Index can help explain why two developing countries with identical Gross Domestic Product (GDP) can nevertheless fare so differently in more comprehensive metrics of quality of life, so too can an American Human Development Index illuminate the distribution of disparities and opportunities within a single developed country. This chapter looks specifically at applications of the human development framework to the states of Mississippi and Louisiana. In so doing, it uncovers that while certain population groups within these states thrive at the same level as the average of the top-ranked American state (Connecticut), other groups within these states lag decades behind. Recommendations for improving human developing rankings in these two Gulf States follow.

Introduction

> Our gross national product. . . if we should judge America by that – counts air pollution and cigarette advertising, and ambulances to clear our highways of carnage. It counts special locks for our doors and the jails for those who break them. It counts the destruction of our redwoods and the loss of our natural wonder in chaotic sprawl. . . . Yet the gross national product does not allow for the health of our children, the quality of their education, or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages;

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the intelligence of our public debate or the integrity of our public officials… it measures everything, in short, except that which makes life worthwhile. And it tells us everything about America except why we are proud that we are Americans.

Robert F. Kennedy, March 18, 1968

Over the years, enlightened American figures have recognized the shortcomings of existing measures of overall well-being and quality of life, and some have put forth proposals to counter an over reliance on Gross Domestic Product (GDP) and other money metrics to understand how ordinary Americans are faring. But none of them thus far has been able to topple the supremacy of GDP.

The first American Human Development Report (Burd-Sharps, Lewis, & Martins, 2008) uses a well-honed international approach to assess the well-being of different population groups within the United States. The hallmark of this approach, which marks a departure from GDP, is the construction of a composite "human development index." The American Human Development (HD) Index is a numerical measure of well-being and opportunity comprised of health, education, and income indicators. In the report, the HD Index is presented disaggregated by state, by congressional district, by racial/ethnic group, and by gender, creating sets of ranked lists. The report reveals tremendous disparities in well-being throughout the country and powerfully demonstrates that aggregate economic metrics like GDP mask wide variation in quality of life across the United States.

The states of Mississippi and Louisiana ranked at or near the bottom of the 2008–2009 index. Subsequent case studies sought to examine the conditions in these two states more closely. *A Portrait of Mississippi: Mississippi Human Development Report 2009* (Burd-Sharps et al., 2009a) was commissioned by the Mississippi State Conference of the National Association for the Advancement of Colored People (NAACP) and funded by Oxfam America. *A Portrait of Louisiana: Louisiana Human Development Report 2009* (Burd-Sharps et al., 2009b) was commissioned and funded by the Louisiana Disaster Recovery Foundation, the Foundation for the Mid South, and Oxfam America. This chapter reports results from these case studies and assesses how the human development framework can inform quality of life studies in the American context.

About Human Development

Human development is defined as the process of enlarging people's freedoms and opportunities and improving their well-being. It is about what ordinary people can do and be in their lives. The human development concept is the brainchild of the late economist Mahbub ul Haq (see, e.g., ul Haq, 1995). At the World Bank in the 1970s, and later as minister of finance in his own country, Pakistan, Dr. Haq argued that existing measures of human progress failed to account for the true purpose of development – to improve people's lives. In particular, he believed that the commonly used measure of GDP was an inadequate measure of well-being.

Dr. Haq often cited the example of Vietnam and Pakistan; both had the same GDP per capita, around $2,000 per year, but Vietnamese, on average, lived a full

8 years longer than Pakistanis and were twice as likely to be able to read. In other words, money alone failed to tell the whole story; the same income was buying two dramatically different levels of human well-being. Working with Nobel Laureate Amartya Sen and other gifted economists, in 1990 Dr. Haq published the first Human Development Report, which had been commissioned by the United Nations Development Programme.

The human development framework emphasizes the everyday experience of ordinary people, including the economic, social, legal, psychological, cultural, environmental, and political processes that define the range of options available to us. It encompasses numerous factors that shape people's opportunities and enable them to live lives of meaning, choice, and value. These factors vary in importance over time and place, but they can include the capability to participate in the decisions that affect one's life, to earn a decent living, to have access to a quality education and affordable health care, to practice one's religious beliefs, to enjoy cultural liberty, to live free from fear and violence – and many more. This approach soon gained support as a useful tool for analyzing the well-being of large populations. In addition to the global Human Development Report that comes out annually, national and regional reports have been produced since 1992, with an impressive record of spurring public debate and political engagement.

The American Human Development Index

The hallmark of the Human Development series is the Human Development Index (HDI),[1] a measure that reflects what most people believe are the basic ingredients of human well-being: a long and healthy life, access to knowledge, and a decent material standard of living. Yet unlike the many existing measurements used to assess health, education, or income alone, the index combines these factors into one easy-to-understand number. This more comprehensive measure broadens the analysis of the interlocking factors that fuel advantage and disadvantage, create opportunities, and determine life chances. Because it uses easily understood indicators that are comparable across geographic regions and over time, the index also allows for a shared frame of reference in which to assess well-being and permits apples-to-apples comparisons from place to place as well as year to year.

The human development framework encompasses a range of factors that contribute to human well-being, but the HDI admittedly settles on three narrow categories of measurement. There are several reasons for this. The three areas of health, education, and income are universally accepted as components of a good life, and defensible proxy indicators exist for all three. Differences in measurement and data collection, as well as the value that different people place on various elements

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[1]Because the two indices are constructed of different indicators, we distinguish the American Human Development Index by abbreviating it as the American HD Index, and use the common abbreviation HDI to refer to the United Nations Human Development Index.

of human development beyond these three, make it exceedingly difficult to include additional indicators in the composite index. While including additional indicators could give us a more holistic understanding of well-being, it would do so at the expense of the simplicity of these three main drivers of human development. Thus the HDI opts for the most parsimonious model of human development that still captures the thrust of broadening development beyond aggregate economic indicators. Acknowledging the weakness of the HDI in encompassing the full range of dimensions of human development, the index serves not as the final word, but rather as a meaningful starting point for a broader discussion of challenges and opportunities for groups to reach their full potential.

More than 160 countries have presented the HDI in national reports, sometimes using the standard HDI formula seen in the annual global report, and in other cases modifying the formula to suit an individual country's situation. The modified American Human Development Index is the first time this index has been applied in an affluent country. It measures the same three basic dimensions as the standard HDI, but it uses different indicators to better reflect the US context and to maximize use of available data.

Following the publication of *The Measure of America: American Human Development Report 2008–2009* (Burd-Sharps, Lewis, & Martins, 2008), various organizations expressed interest in exploring deeper levels of disaggregation in order to be able to understand the distribution of opportunity and advantage among smaller population groups. *A Portrait of Mississippi* (Burd-Sharps et al., 2009a) and *A Portrait of Louisiana* (Burd-Sharps et al., 2009b) both present the American HD Index at the level of county groups as well as by race and by gender. The index uses official government statistics, using state-level raw mortality data in order to calculate life expectancy at birth, and US Census Bureau data for the education and health indicators.

- *A long and healthy life* is measured using life expectancy at birth, calculated from mortality data from the Vital Statistics Unit of the Office of Public Health Statistics, Mississippi State Department of Health, the Louisiana State Center for Health Statistics, and population data from the National Center for Health Statistics of the CDC and the US Census Bureau, Bridged Race Population Estimates, Vintage 2007.
- *Access to knowledge* is measured using two indicators: combined gross enrollment in all levels of education and educational degree attainment for the population 25 years and older (based on the percentages of the adult population that have earned a high school diploma, a bachelor's degree, and a graduate or professional degree). Both indicators are from the American Community Survey, US Census Bureau, 2005–2007 three-year estimates.
- *Decent standard of living* is measured using median earnings for workers aged 16 and above from the American Community Survey, US Census Bureau, 2005–2007 three-year estimates. This figure captures the median earnings of all workers, employed either part- or full-time, who had any earnings in the year leading up to the survey.

Modifying the HDI for an Affluent-Country Context

The standard HDI was created by the United Nations Development Programme (UNDP) in the late 1980s and is published annually in the Human Development Report. This composite index was created to measure human development in all countries of the world, ranging from very-low-income countries in sub-Saharan Africa to the high-income countries of Europe, North America, and others. Thus, some of the indicators used and the goalposts chosen are not well suited to measurement of human development in an advanced industrialized economy such as the United States.

The American HD Index is thus a modified version of UNDP's index created by the American Human Development Project. It follows the same principles of the standard HDI, measuring the same three basic dimensions of human development – health, knowledge, and standard of living. Table 6.1 lists the indicators used in the American HD Index and the standard HDI:

In the *health dimension*, the same indicator is used (life expectancy at birth), but the goalposts are changed. The standard HDI uses goalposts of 25 years (minimum) and 85 years (maximum), to accommodate the enormous gap in life expectancy found in countries around the world. For the American HD Index, the goalposts were set at 66 years and 90 years, a range that accommodates the variations across all groupings considered in *The Measure of America*. Since life span in the United States is nowhere near the lower limit of 25 years set in the standard HDI, using the standard HDI goalposts would cluster all Health Index values around the maximum value, providing very little differentiation among states, congressional districts, and so on.

In the *knowledge dimension*, adult literacy rate is replaced with an educational attainment index. Adult literacy is a relevant indicator in a global context, where illiteracy at high levels is still found, but is largely irrelevant for developed nations, where most of the adult population has basic reading and writing skills and the labor market demands increasingly sophisticated skills. Functional literacy (the ability to read, write, and speak in English, and compute and solve problems at levels of proficiency necessary to function on the job and in society, achieve one's goals, and develop one's knowledge and potential) would be a good indicator, but suffers from severe data availability problems. Thus, the educational attainment index was used. It captures the overall educational level of the population, and is a good indicator

Table 6.1   Indicators used in the American HD Index and standard HDI

	Indicator	
Dimension	American HD Index	Standard HDI
Health	Life expectancy at birth	Life expectancy at birth
Knowledge	Educational attainment	Adult literacy rate
	Gross enrollment ratio	Gross enrollment ratio
Standard of living	Median personal earnings	GDP per capita

of how well any given population is prepared to satisfy an increasingly demanding labor market.

The second knowledge indicator, school enrollment, which uses the combined gross enrollment ratio indicator, is the same in both the American HD Index and the standard HDI with a slight modification. Enrollment in the American HD Index includes nursery school and prekindergarten. This is in order to take into consideration robust evidence that high-quality preschool care leads to better school outcomes and vastly improved life chances. The goalposts are also changed, from 0 to 100% in the standard HDI to 70–100% in the American HD Index, in order to reflect the ranges observed in all American HD Index groupings.

In the *standard of living* dimension, GDP per capita in the standard index is replaced by median personal earnings. For relatively closed economies such as countries, GDP per capita is a defensible indicator of the income appropriated by the local population, though it fails to capture how that income is distributed. GDP per capita is not appropriate for the more open economies of states and congressional districts, however. Two points about this indicator merit mention:

1. The choice was made to use personal rather than the more commonly used household earnings for the purposes of this index to better understand gender differences in income. While in many cases two earners living together pool their earnings for household use, there is extensive research supporting the view that the lower-earning spouse or partner has less power in the relationship, fewer options, lower social standing, and far greater vulnerability in the case of divorce. These are all very important non-income aspects of human development.
2. Some have argued that the median personal earnings indicator does not take into consideration differences in the cost of living among different locales or between urban and rural areas. For several reasons, we would argue that adding a cost-of-living adjustment would introduce inaccuracy more than it would add precision. First, there is no existing official calculation of adjusted cost of living and some private efforts have many shortcomings: they are not comparable from place to place, they focus on the more affluent, and they do not adequately account for rural communities, the poor, or the elderly. Secondly, while the cost of living, on average, is lower in the South than in other parts of the country, this can change due to events. For example, 4 years after Hurricane Katrina, housing and insurance costs in coastal Louisiana remain extremely high, making the overall cost of living in many of these communities more like the national average.

Median personal earnings, therefore, though not a perfect indicator, are a sound, defensible proxy for standard of living.

Before the HD Index itself is calculated, a subindex is created for each of these three dimensions. To calculate these indices – the health, education, and income indices – minimum and maximum values (goalposts) are chosen for each underlying indicator. The goalposts are determined based on the range of the indicator observed on all possible groupings and also taking into account possible increases

and decreases in years to come. These are then adjusted in order to achieve a balance in the final index.

All three dimensions of the index are weighted equally, which reflects the conceptual framework that sees income as a means to an end – human freedom and well-being – rather than as an end in itself. So the final step is to calculate the index by the simple average of the health, education, and income indices:

$$\text{HD Index}_i = (\text{Health Index}_i + \text{Education Index}_i + \text{Income Index}_i)/3$$

As a result of the above modifications, the American HD Index and the standard HDI are not comparable. In order to avoid comparison attempts, the American HD Index has been designed to vary from 0 to 10, with 10 being the highest level of human development, whereas the standard HDI varies from 0 to 1.

What the HD Index Reveals: Results from Mississippi

On the ranked list of all 50 states and Washington, DC, Mississippi was last, with the lowest life expectancy of any US state, the highest rate of adults 25 and older who had not completed high school or earned a high school equivalency degree, and one of the lowest levels of median personal earnings from wages and salaries in the nation. On the ranking of the country's 436 congressional districts (each with a population of approximately 650,000), the four Mississippi districts ranked 380, 413, 416, and 429 (Burd-Sharps et al., 2008).

What was surprising was not that Mississippi was at the bottom – Mississippi has tended to be at or near the bottom of these sorts of indexes for generations – but rather how far down the bottom it actually was. Top-ranking Connecticut had an HD Index of 6.37, which, if current trends continue, will be the average HD Index of the United States as a whole in the year 2020. Mississippi, on the other hand, had an HD Index (3.58) lower than that of the whole country in the late 1980s (3.82). In other words, a gap in human development of over three decades – more than a generation of human progress – separates the states at the bottom from the states at the top of the American Human Development Index.

Trends in the State Over Time

One key to understanding the human development situation in Mississippi is to look at progress over time. The historical trend from 1990 to 2007 reveals a mixed picture (see Table 6.2). Life span has increased almost 2 years since 1990, from 73.1 years to 74.9. The rate at which young people are graduating from high school has improved markedly since 1990, when more than one-third of those 25 and over did not have a high school diploma or its equivalent, to today, when that rate has gone down to just over one-fifth. Similarly, the attainment of bachelor's and graduate or professional degrees has edged up slightly since 1990.

Table 6.2 Mississippi human development index, 1990–2007

Year	HD index	Life expectancy at birth (years)	Less than high school (%)	At least high school diploma (%)	At least bachelor's degree (%)	Graduate degree (%)	School enrollment (%)	Median earnings (2007 dollars)
2007	3.66	74.9	21.5	78.5	18.9	6.4	83.3	22,566
2005	3.58	73.9	21.5	78.5	18.7	6.5	82.6	23,401
2000	3.48	73.5	27.1	72.9	16.9	5.8	81.8	24,536
1990	2.94	73.1	35.7	64.3	14.7	5.1	82.4	21,212

Inflation-adjusted median earnings in Mississippi, defined as the wages and salaries of all full- and part-time workers over age 16, on the other hand, have barely increased during this 17-year period, and have, in fact, fallen since 2000. Median earnings in Mississippi now are $22,566, higher only than those of one other state, Montana, and significantly lower than the national average of $28,640.

Variation by County

Mississippi comprises 82 counties. The population of most of these counties is too small to allow for statistically robust data collection in a number of areas. Therefore, the US Census Bureau's American Community Survey (ACS), the source of data for the education and income indicators, presents data by groups of counties. Mississippi has 23 of these official groupings; each one contains at least 100,000 people. Some counties with large populations are split; others are grouped together by adjacent counties. They are referred to in our report as the two most populous counties within each group.

Where in the state are people's choice and opportunities greatest, on average? Table 6.3 provides a snapshot of the state by county groups. At the top of the human development scale are Rankin, Madison-Hinds, and Hinds counties, located in and around the state capital, and DeSoto County, part of the metropolitan Memphis area in neighboring Tennessee.

The top three county groupings are well ahead of the rest of the state and are the only ones with earnings above the $30,000 mark. They have a human development level right around the US average (in 2005, the most recent year for which all necessary national data are available).

At the other end of the spectrum are three county groupings in the Mississippi Delta: Washington-Bolivar, Leflore-Sunflower, and Panola-Coahoma. In this part of the state, Mississippians have an average life span of 72.3 years and earn less than $19,000. These three Delta county groups are among the four with the highest poverty levels in Mississippi.

The gap between the top- and bottom-ranked counties in the state is striking. A resident of Rankin County lives, on average, 6 years longer, is almost two times more likely to complete high school and three times more likely to complete college,

Table 6.3 Mississippi human development index by County group, 2007

Rank	County group	HD index	Life expectancy at birth (years)	Less than high school (%)	At least high school diploma (%)	At least bachelor's degree (%)	Graduate or professional degree (%)	School enrollment (%)	Median earnings (2007 dollars)
1	Rankin	5.36	78.2	14.5	85.5	31.9	9.3	87.3	31,229
2	Madison–Hinds	4.96	74.0	12.4	87.6	35.2	10.9	88.9	31,511
3	DeSoto	4.92	76.7	13.4	86.6	21.6	6.9	86.3	31,000
4	Hinds	3.84	74.7	19.0	81.0	25.3	9.7	88.0	21,191
5	Forrest–Lamar	3.79	75.0	16.5	83.5	27.7	11.2	86.2	20,148
5	Pearl River–Hancock	3.79	74.4	20.2	79.8	16.1	5.2	81.1	25,881
7	Jackson	3.75	74.5	17.3	82.7	16.7	6.1	80.5	24,928
8	Lafayette–Marshall	3.65	74.5	28.4	71.6	19.3	6.7	90.1	21,474
9	Harrison	3.64	74.2	20.5	79.5	19.6	7.1	80.9	23,804
10	Oktibbeha–Clay	3.63	76.3	21.2	78.8	21.5	9.2	86.6	18,716
11	Lee–Pontotoc	3.52	75.0	22.1	77.9	15.8	5.3	81.7	22,300
11	Lowndes–Monroe	3.52	75.9	22.7	77.3	16.4	6.5	80.3	21,462
13	Lauderdale–Newton	3.40	74.4	20.7	79.3	15.0	5.2	85.0	20,833
14	Alcorn–Prentiss	3.26	74.6	27.1	72.9	11.3	3.3	76.6	23,928
15	Warren–Yazoo	3.21	73.2	20.4	79.6	17.1	7.0	86.4	19,609
16	Lincoln–Copiah	3.16	73.8	23.3	76.7	16.2	5.3	82.0	20,610
17	Grenada–Attala	3.09	73.7	29.3	70.7	15.1	2.9	80.9	21,685
18	Jones–Wayne	3.03	74.1	23.6	76.4	12.8	5.3	71.6	23,003
19	Neshoba–Scott	2.89	73.8	26.5	73.5	10.0	3.4	78.7	20,657
20	Pike–Adams	2.85	73.4	23.6	76.4	13.6	5.0	78.0	20,061
21	Washington–Bolivar	2.83	72.2	28.8	71.2	20.0	7.0	84.8	18,733
22	Leflore–Sunflower	2.57	72.5	32.3	67.7	13.0	3.0	90.0	16,676
23	Panola–Coahoma	2.50	72.3	24.4	75.6	12.2	3.4	78.4	18,728
	Mississippi Total	3.66	74.9	21.5	78.5	18.9	6.4	83.3	22,566

and earns over $12,000 more than a resident of the Panola-Coahoma area. With an HD Index of 2.50, Mississippians living in Panola-Coahoma have a human development level similar to that of the average American in 1975, more than 30 years ago.

Variation by Race

As is evident from the discussion above, overall county differences in Mississippi are quite wide in all three dimensions of the index. They are wider still when it comes to race (see Table 6.4).[2] In Mississippi, on average, whites can expect to outlive African Americans by almost 4 years, and whites' average personal earnings are more than $10,000 higher per year. Whites are 43% less likely to have dropped out of high school than their African American counterparts.

Summarizing these three indicators into one composite picture reveals that while whites in Mississippi today have a human development level comparable to that

Table 6.4 Mississippi human development index by race and race/county group, 2007

Grouping	HD index	Life expectancy at birth (years)	Less than high school (%)	At least high school diploma (%)	At least bachelor's degree (%)	Graduate degree (%)	School enrollment (%)	Median earnings (2007 dollars)
Race								
Whites	4.37	76.2	17.0	83.0	22.6	7.8	82.1	27,182
African Americans	2.44	72.5	29.6	70.4	11.6	3.8	85.2	16,720
Race/county group								
Hinds whites	6.41	79.4	8.7	91.3	47.7	21.3	96.3	32,010
Pike-Adams African Americans	1.43	71.1	32.3	67.7	8.0	3.1	78.0	13,079

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[2]In this study, data were only presented for two of the five largest Census Bureau racial/ethnic categories – African Americans and whites – because these two groups together constitute nearly the entire population of Mississippi. The vast majority of county groups are between 97.2 and 100% African American and white in their racial makeup. The two county groups with the largest populations of people who are neither African American nor white have small populations of people with Vietnamese ancestry (in Harrison), Native Americans (in Neshoba-Scott), and people of Latino origin (in Harrison). The population of these groups is not of sufficient size to allow for a disaggregated well-being score within an acceptable margin of error on this index. A closer look at a broad range of well-being indicators for these populations of Mississippians would be a valuable area for future research.

of the average American circa 1997, African Americans in the state, on average, experience the level of access to choices and opportunities of the average American in 1974. It can be said that whites in the state are a full 10 years behind the typical American while African Americans are 33 years behind.

When looking at geography and race combined, the gap nearly triples. White Mississippians living in Hinds County have an HD Index value that, if current trends continue, will be reached by the United States as a whole around the year 2020, and roughly comparable to that of the top-ranked state in the United States, Connecticut. African Americans living in Pike-Adams, on the other hand, have an HD Index which corresponds to the human development level of the average American circa 1960 – a six-decade difference. Hinds whites live, on average, 8 years longer, are more than three times less likely to drop out of high school and six times more likely to have a bachelor's degree, and earn two and a half times more than Pike-Adams African Americans.

For whites, the bottom groups of counties are Jones-Wayne, Alcorn-Prentiss, and Neshoba-Scott. A white resident of top-ranked Hinds lives 4 years longer, is three times less likely to drop out of high school, and earns 31% more than a white residing in Neshoba-Scott.

For African Americans, Leflore-Sunflower, Panola-Coahoma, and Pike-Adams are at the bottom of the rankings. African Americans living in top-ranked DeSoto live 6 years longer, are two times more likely to have a bachelor's degree, and earn almost twice as much as their Pike-Adams counterparts.

Whites living in bottom-ranked Neshoba-Scott have a higher HD Index than African Americans in all but two counties (DeSoto and Rankin).[3] The same is true for income: while the range of earnings for whites in all county groups spans from $22,000 to $38,000, for African Americans, the same range is $13,000–$25,000. This provides a sobering measure of the racial disparities in Mississippi: whites who are worst off in the entire state are still better off than the vast majority of African Americans.

Variation by Gender

Overall, women and girls in Mississippi have a higher HD Index than do men and boys – despite the fact that women earn 33% less than men (see Table 6.5). Men's income advantage is wiped out by better outcomes for women in health and education (females have slightly higher educational attainment scores, but

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[3]Even in those two counties, African Americans have unusually high life expectancies, which drive their HD Indices up, much higher than third-ranked Hinds County. Those values should be viewed with caution, since both counties experienced large inflows of African Americans in recent years. Even though we used 5-year pooled data in the estimation of life expectancies, in order to minimize the effects of migration on the estimates, African American life expectancy – and consequently the HD Indices as well – in DeSoto and Rankin counties are probably still overestimated.

Table 6.5 Mississippi human development index by gender and race/gender, 2007

Grouping	HD index	Life expectancy at birth (years)	Less than high school (%)	At least high school diploma (%)	At least bachelor's degree (%)	Graduate degree (%)	School enrollment (%)	Median earnings (2007 dollars)
Gender								
Males	3.59	76.7	20.1	79.9	19.5	6.5	87.3	18,176
Females	3.49	71.3	23.1	76.9	18.2	6.4	79.5	27,898
Gender and race								
White males	4.39	79.5	15.9	84.1	22.4	7.5	84.6	21,453
White females	4.30	72.9	18.3	81.7	22.9	8.1	79.8	33,390
African American males	3.04	76.5	27.2	72.8	14.1	4.6	91.1	14,915
African American females	1.98	68.2	32.5	67.5	8.5	2.9	79.3	20,368

a substantially higher school enrollment ratio, as well as a life expectancy over 5 years longer).

Turning to gender differences by county, females live longer across the board and have better education scores in all but two county groups, although they earn less than males in all county groupings. As a result, females have a higher HD Index in 16 of the 23 county groupings.

Income disparity is largest in Pike-Adams, where females earn half as much as males, and smallest in Panola-Coahoma, where they earn almost three-quarters as much.

The picture becomes more nuanced when race is added to gender. White women have the highest level of human development, followed very closely by white men. Among African Americans, however, there is a significant gender gap. African American women have an index score about 50% higher than that of African American men. African American men have an index score lower than the average for the United States in 1970, almost 40 years ago.

In terms of *health,* white women in Mississippi live 3 years longer, on average, than African American women in the state; for men, that gap is 4.5 years.

Turning to *education*, African American women are more likely to have graduated from high school than are African American men (72.8% as compared with 67.5%); and 65% more likely to have a bachelor's degree (14.1% as compared with 8.5%). White men and white women have completed bachelor's degrees at about the same rate (22.9 and 22.4%, respectively).

When it comes to *earnings,* African American women have wages and salaries, on average, that are lower than those of the typical American in 1960. White men

earn the most; their earnings are 50% higher than those of white women and African American men, and more than double those of African American women.

What the HD Index Reveals: Results from Louisiana

When Hurricane Katrina made landfall in Mississippi and Louisiana during the hurricane season of 2005, extreme weather and acute human vulnerability met head on with tragic results. Longstanding gaps in the well-being of different groups of US Gulf coast residents were suddenly everywhere in evidence – on rooftops, on I-10 overpasses, and on TV screens across the country and around the world. Many were stunned by what they saw. They should not have been. The problems of social exclusion, residential segregation, and human poverty that Katrina brought to light hide in plain sight in every US state.

Our 2008 research using pre-Katrina 2005 data told a sobering tale. The human development level of Louisiana compared with that of the rest of the country, as well as the racial disparities within the state, indicated significant and widespread vulnerabilities. Louisiana ranked number 49, followed only by West Virginia and Mississippi on the American Human Development Index. The state was near the bottom in terms of life expectancy, and nearly one in five adults had not completed high school.

These preexisting vulnerabilities writ large were everywhere in evidence when Hurricane Katrina hit in 2005. Subsequent work, which culminated in the publication of A Portrait of Louisiana, took a deeper look at the human development situation in the state, this time using post-Katrina data from 2007 – the latest year for which all indicators were available. What the analysis reveals is a distribution of vulnerability and resilience striking in its variation and closely tied to race. Some in the state today are experiencing well-being at the highest levels in the nation. White Louisianans living in New Orleans' Southwest area (including the neighborhoods of Uptown, Carrollton, Central City, and the Garden District) have an HD Index score (6.91) that bests the top-ranked US state of Connecticut (6.37). At the other end of the spectrum, African Americans living in rural Tangipahoa Parish have an HD Index score of 0.98, which corresponds to the human development level of the average American in the early 1950s.

Trends in the State Over Time

The historical trend from 1990 to 2007 reveals a mixed picture in Louisiana (see Table 6.6).

- Life span increased more than 2 years during this 17-year period, from 73.1 to 75.3 years.
- The rate at which young people are graduating from high school improved markedly since 1990, when almost one-third of those 25 years and older did

Table 6.6 Louisiana human development index, 1990–2007

Year	HD index	Life expectancy at birth (years)	Less than high school (%)	At least high school diploma (%)	At least bachelor's degree (%)	Graduate degree (%)	School enrollment (%)	Median earnings (2007 dollars)
2007	3.92	75.3	20.6	79.4	20.1	6.8	82.9	24,376
2005	3.85	74.0	19.5	80.5	20.6	7.1	83.7	23,467
2000	3.87	74.4	25.2	74.8	18.7	6.5	84.7	25,541
1990	3.15	73.1	31.7	68.2	16.0	5.5	80.3	23,122

not have a high school diploma or its equivalent, to today, when that rate has gone down to one-fifth. The attainment of bachelor's and graduate or professional degrees edged up slightly.

- Inflation-adjusted median earnings in Louisiana, defined as the wages and salaries of all full- and part-time workers over age 16, barely increased during this period. They fell during the first half of the 2000s and then grew in the last 2 years. Median personal earnings in Louisiana now are $24,376–$4,264 lower than the national average of $28,640.

Variation by Parish

Louisiana comprises 64 parishes, broken up, as in Mississippi, into 36 parish groupings. (Louisiana is the only US state that is made up of parishes rather than counties). The Human Development Index for Louisiana, by parish groups, is contained in Table 6.7.

The gaps between the top- and bottom-ranked areas on the overall index as well as in health, education, and income are significant. The distance separating the top and bottom tracts on the overall index is particularly striking because both extremes are found in the same city – the Baton Rouge area.[4] A resident of East Baton Rouge (South)–West Baton Rouge can expect to live, on average, nearly half a decade longer, earns twice as much, is almost three times more likely to have a bachelor's degree, and is three times less likely to have dropped out of high school than a resident of East Baton Rouge (North and Central). With an HD Index score of 2.51, Louisianans living in East Baton Rouge (North and Central) have a human development level similar to that of the average American more than three decades ago.

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[4]Nationwide, the greatest gaps are often found within major metropolitan areas.

Table 6.7 Louisiana human development index by Parish group, 2007

Rank	Parish group	HD index	Life expectancy at birth (years)	Less than high school (%)	At least high school diploma (%)	At least bachelor's degree (%)	Graduate degree (%)	School enrollment (%)	Median earnings (2007 dollars)
1	E. Baton Rouge (South)-W. Baton Rouge	5.73	77.3	8.8	91.2	40.6	14.7	89.9	32,631
2	Jefferson (North)	5.39	76.8	12.2	87.8	33.6	11.5	91.2	31,166
3	E. Baton Rouge (South)	5.12	76.7	9.4	90.6	45.7	19.7	91.8	23,841
4	Jefferson (West)	4.71	76.1	16.9	83.1	25.2	8.4	86.9	28,749
5	St. Tammany-Washington	4.59	75.3	13.1	86.9	30.1	9.8	86.6	27,011
5	St. Tammany	4.59	76.8	16.7	83.3	23.1	7.2	81.2	29,219
7	Lafayette (Central)	4.54	75.7	14.4	85.6	34.2	11.0	88.1	24,556
8	E. Baton Rouge (North)	4.47	76.0	14.2	85.8	18.8	5.6	87.4	26,935
8	Orleans (West)	4.47	74.2	15.7	84.3	33.2	13.7	95.1	23,106
10	Orleans (Southwest)	4.42	75.0	18.5	81.5	35.4	16.5	93.8	21,816
11	Livingston-Ascension	4.33	75.7	16.0	84.0	16.3	4.0	80.2	29,949
12	Caddo (South)	4.20	74.9	16.1	83.9	24.2	8.6	87.4	24,577
12	St. Charles-St. John the Baptist	4.20	76.3	17.4	82.6	16.6	4.2	81.6	27,022
14	Bossier-Webster	3.99	76.3	17.5	82.5	18.3	5.7	78.3	25,430
15	Ouachita	3.93	75.0	18.6	81.4	22.5	7.0	86.6	22,837
16	Jefferson (South)	3.82	75.4	25.0	75.0	13.5	4.6	84.3	24,782
17	Rapides	3.79	76.9	18.9	81.1	18.7	6.1	79.0	22,436
17	Vernon-Beauregard	3.79	78.4	20.6	79.4	12.9	4.1	74.3	23,400
19	Lafayette-Acadia	3.77	75.0	24.0	76.0	15.5	4.3	80.8	25,753
20	Calcasieu	3.68	74.4	19.7	80.3	18.4	6.3	83.7	23,104

Table 6.7 (continued)

Rank	Parish group	HD index	Life expectancy at birth (years)	Less than high school (%)	At least high school diploma (%)	At least bachelor's degree (%)	Graduate degree (%)	School enrollment (%)	Median earnings (2007 dollars)
20	Terrebonne	3.68	75.0	28.2	71.8	13.6	4.4	78.4	26,729
22	Jefferson (East)	3.67	75.1	23.2	76.8	15.3	4.5	81.3	24,199
23	Lafourche-Assumption	3.66	76.2	31.1	68.9	12.6	4.1	75.8	26,481
24	Lincoln-Natchitoches	3.54	75.7	21.7	78.3	18.0	7.3	87.1	19,241
25	St. Bernard-Plaquemines	3.46	72.8	25.1	74.9	10.1	2.8	83.2	26,070
26	Iberville-Pointe Coupee	3.41	75.0	26.9	73.1	12.4	3.5	83.0	22,306
27	Orleans (Southeast)	3.37	72.9	21.5	78.5	25.6	9.8	84.8	20,559
28	St. Mary-St. Martin	3.31	75.5	30.5	69.5	10.0	2.7	80.5	22,368
29	Caddo (North)	3.26	74.5	20.1	79.9	20.3	7.0	81.3	19,715
30	Iberia-Vermilion	3.17	75.4	26.5	73.5	11.7	2.7	75.7	22,085
31	Orleans (East)	3.13	70.9	21.6	78.4	17.6	5.4	85.3	22,323
32	St. Landry-Evangeline	3.06	74.8	31.4	68.6	11.5	3.4	76.7	22,105
33	Tangipahoa	3.05	72.9	23.1	76.9	17.9	6.0	76.3	22,220
34	Morehouse-Union	3.01	73.8	28.1	71.9	11.7	3.7	79.7	21,420
35	Avoyelles-Concordia	2.76	73.4	29.2	70.8	10.0	3.0	78.0	20,684
36	E. Baton Rouge (Central)	2.51	72.7	26.7	73.3	14.2	4.8	85.0	16,398
	Louisiana Total	3.92	75.3	20.6	79.4	20.1	6.8	82.9	24,376

Variation by Race

What the analysis reveals is little overlap between these whites and African Americans on our well-being scales.[5] Whites who are the worst off are still better off than the vast majority of African Americans. Whites living in bottom-ranked parish group Avoyelles-Concordia have a higher HD Index score than African Americans in all but four out of the 36 parish groups.

Whites in the southwestern part of New Orleans can expect to live, on average, a full decade longer, are almost nine times less likely to have dropped out of high school and more than six times more likely to have a college degree, and earn two and a half times more than Tangipahoa African Americans, at the bottom of the index for African Americans (see Table 6.8).

Turning to the subcomponents that make up the index, white *life expectancy* at birth in Louisiana today is, on average, 76.6 years, as compared with 72.2 years for African Americans. A life span of 72.2 years is on par with the US average in the mid-1970s and is shorter than the life expectancy in Colombia, Vietnam, and Venezuela today (United Nations Development Programme, 2007/2008, p. 230).

Table 6.8 Louisiana human development index by Race and Race/Parish group, 2007

Grouping	HD index	Life expectancy at birth (years)	Less than high school (%)	At least high school diploma (%)	At least bachelor's degree (%)	Graduate degree (%)	School enrollment (%)	Median earnings (2007 dollars)
Race								
Whites	4.62	76.6	16.6	83.4	23.3	7.8	83.2	28,912
African Americans	2.32	72.2	29.2	70.8	11.8	3.8	82.1	17,010
Race/Parish group								
Orleans (Southwest) whites	6.91	79.6	4.4	95.6	61.3	28.7	104.1	31,351
Tangipahoa African Americans	0.98	69.9	38.5	61.5	9.3	3.4	72.1	12,703

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[5] As with the Mississippi study, this study of Louisiana focused primarily on whites and African Americans. Though Louisiana is also home to Latinos, American Indians, Vietnamese Americans, and people of other ethnicities, insufficient data on these comparatively small populations make it impossible to calculate comparable, statistically reliable Index scores for them. As data collection, both at the state level and through the American Community Survey, continues to improve, the American Human Development Project will be able to more accurately reflect the well-being of these groups in the index.

Overall, whites in Louisiana can expect to outlive African Americans by more than 4 years. The gap is larger when considering geography and race combined. Whites in Orleans Parish outlive their African American neighbors, on average, by a full decade. African American lifespan in Orleans, at 69.3 years, is nearly as low as that of North Korea (67), and below that of Sri Lanka, Algeria, the Philippines, and many other developing countries in the same year, 2007 (United Nations Children's Fund, 2008).

In *educational attainment and enrollment,* racial disparities in Louisiana are significant. The hardest hit in tough times are families headed by adults who never finished high school and young high-school dropouts ages 16–24 who are looking to enter the workforce. Poorly educated workers have the least job security, scant savings, little social capital to draw upon in finding a first or new job, and basic skills too wanting to provide a robust foundation for retooling or higher education.

Nearly one in three African American adults aged 25 and over in the state has not graduated from high school. The range spans from 14% of adults in Jefferson (North) to more than 40% of adults in the Lafourche-Assumption parish group. In our knowledge-based global economy, the milestone of high-school graduation is central to expanding the choices and opportunities of young people and is generally the bare-bones minimum for a job that pays a living wage. College-going rates vary widely as well. Overall, African Americans in Louisiana are less than half as likely to have completed college as their white counterparts. The full range spans from under 10% for African Americans in Tangipahoa to about 60% for whites in Orleans Southwest.

In terms of *earnings*, income levels show virtually no overlap among the races in the state. The range of median earnings for whites, by parish group, spans from $25,000 to $37,000, while for African Americans the same range is from $13,000 to $25,500. African Americans at the bottom of the earnings scale earn less today than the average American earned in the 1950s.

Another important way of understanding the distribution of resources is by grouping families across the state by income. A diagram of income distribution in Louisiana for whites and African Americans reveals a startling pattern (see Fig. 6.1). About 7% of white families have incomes below $15,000 and nearly 25% have incomes of $100,000 or more. The exact opposite is the case for African Americans: fewer than 7% have incomes of $100,000 or above, and 25% live below the $15,000 level. Finally, while there is a solid middle class of over half of white families earning in the range of $35,000–$100,000 (about 51%), the middle class for African Americans is considerably smaller, with a total of 37% (US Census Bureau, 2007: Table B19082).

Variation by Gender

On average, women in Louisiana live longer than men and have higher educational levels. But they earn significantly less (see Table 6.9). This mirrors the situation in the United States as a whole.

About 7 percent of white families have incomes below $15,000, and nearly 25 percent have incomes of $100,000 or more. The exact opposite is the case for African Americans.
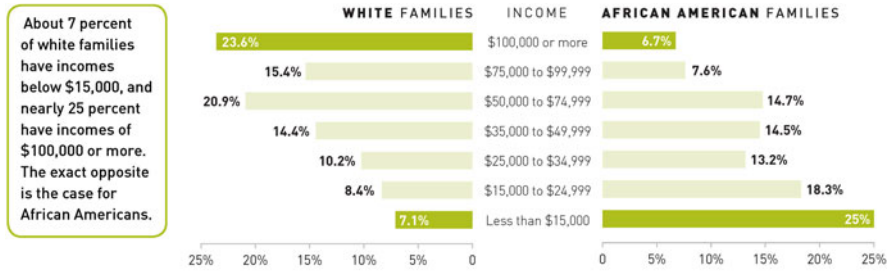
FAMILY INCOME	WHITE # OF FAMILIES	WHITE %	AFRICAN AMERICAN # OF FAMILIES	AFRICAN AMERICAN %
TOTAL	732,190		311,902	
Less than $10,000	28,592	3.9	45,317	14.5
$10,000 to $14,999	23,232	3.2	32,624	10.5
$15,000 to $24,999	61,140	8.4	57,056	18.3
$25,000 to $34,999	75,018	10.2	41,030	13.2
$35,000 to $49,999	105,623	14.4	45,124	14.5
$50,000 to $74,999	153,088	20.9	45,995	14.7
$75,000 to $99,999	112,472	15.4	23,795	7.6
$100,000 to $149,999	110,796	15.1	16,038	5.1
$150,000 to $199,999	34,247	4.7	2,847	0.9
$200,000 or more	27,982	3.8	2,076	0.7

Fig. 6.1 Family income of Whites and African Americans in Louisiana, 2007. Source: US Census Bureau, American Community Survey (2007)

Table 6.9 Louisiana human development index by gender and race/gender, 2007

Grouping	HD index	Life expectancy at birth (years)	Less than high school (%)	At least high school diploma (%)	At least bachelor's degree (%)	Graduate degree (%)	School enrollment (%)	Median earnings (2007 dollars)
Gender								
Males	3.94	72.1	22.0	78.0	19.8	6.9	79.5	31,756
Females	3.82	78.4	19.3	80.7	20.4	6.7	86.3	18,139
Gender and race								
White males	4.61	73.7	17.5	82.5	23.7	8.3	78.3	37,034
White females	4.39	79.5	15.8	84.2	23.0	7.4	85.8	21,026
African American females	2.82	76.0	26.6	73.4	14.1	4.8	86.7	14,993
African American males	2.01	68.1	32.5	67.5	9.1	2.5	78.9	20,905

While the survival and educational attainment gaps between males and females in Louisiana fall within the margins observed in the United States today, the wage gaps do not. Median earnings of white men in Louisiana were about $37,000 in 2007. This is on par with US earnings for white men. Meanwhile, white women's earnings in Louisiana are a remarkable $16,000 less than for white men in the state, and nearly $3,000 below the national average for white women.

For African Americans in Louisiana, the earnings divide between men and women is $6,000. Earnings in both groups are significantly less than the national average for African Americans, which in the same year was about $26,000 for males and $22,000 for females. Thus, earnings average about $5,000 less per person for males in Louisiana as compared with the national average for African Americans, and $7,000 less for females. African American women in Louisiana have wages and salaries comparable to those of the average American in the 1950s. See Table 6.10.

These gender disparities are a critical issue for progress on human development in Louisiana for several reasons. Louisiana has one of the country's highest rates of households headed by single women, and such families make up the majority of Louisiana's poorest households. Nationwide, in 2007, one-half of female-headed households with children under 18 had incomes below the poverty level. For female-headed households with children under the age of 5, nearly three of every five families were living below the poverty level (US Census Bureau, 2009). Research shows that deep poverty in early childhood is particularly damaging to long-term life prospects. Addressing the gender earnings gap and boosting the earnings of African American women in particular would improve the well-being of families in the state as well as help to break the cycle of poverty by setting today's children on a more positive life trajectory.

Turning to gender disparities by parish groupings, women live longer and have better education scores in 26 (out of 36) Louisiana parish groups. But they earn less than men in all of them. As a result, males have a higher HD Index score in 22 of the 36 parish groups.

Income disparity between women and men is largest in Terrebonne, Lafourche–Assumption, St. Mary–St. Martin, Iberia–Vermilion, and Tangipahoa. In those parish groups, men earn at least twice as much as women. Orleans West,

Table 6.10 Median earnings in Louisiana, 2007

Louisiana population group	Median earnings (2007 dollars)	Comparison with US median
White males	37,034	~$7,000 more than 2007 median for all American wage-earners
White females	21,026	About the US median in the late 1960s
African American females	14,993	About the US median in the 1950s
African American males	20,905	About the US median in the early 1960s

Source: US Census Bureau (2007)

Iberville–Point Coupee (which also includes East and West Feliciana and St. Helena parishes), and Orleans East (made up of Village de l'est, Vivant, Venetian Isles, New Orleans East, and the Lower Ninth Ward) have the smallest gender gaps in income; men earn 35% more than women in both Orleans West and Iberville–Point Coupee parish groups, and 22% more in Orleans East.

When both race and gender are taken into account, white males in Louisiana have the highest level of human development, followed closely by white females. African American women come in next, and African American men hold the last spot, with a human development level comparable to that of the average American in the late 1960s. The gender gap among Louisiana African Americans is much larger than among whites: African American women have an HD Index score that is 40% higher than that of their male counterparts.

In terms of health, white women in Louisiana live almost 6 years longer than white men; for African Americans, the gender gap is larger: 8 years. The health of African American men in Louisiana, as in the rest of the nation, is a cause for alarm. African American men in Louisiana live, on average, to 68.1 years, a shorter life span than that of the average American in 1960.

African Americans in Louisiana also show a larger gender gap in education than whites. African American women are more likely to have graduated from high school than their male counterparts (73.4%, as compared with 67.5%) and to have a bachelor's degree (14 vs. 9%), while white men and women have similar high-school graduation rates (around 82–84%) and nearly identical college graduation rates, at about one in four.

Implications

What will it take to improve these states' rankings on the overall Human Development Index? What will it take to close the distressingly wide gaps that separate African Americans and whites in the three fundamental areas of human development measured by the HD Index? What can be done to increase women's earnings to improve their well-being and that of their families? What can we do today that will yield better health, education, and income scores in 5, 10, or 20 years' time?

Specific policy recommendations were well beyond the purview of these studies. However, the findings do pinpoint places, groups, and issues that require urgent attention if the human development situation in these states are to improve. In short, if Louisiana and Mississippi's HD scores are to improve over time, action in the following areas is necessary:

Health

Reduce infant mortality by improving the health of African American girls and women. African American babies die in Mississippi and Louisiana at more than twice the rate of white babies. The death of a child is a loss like no other, and the

burden of grief borne by the African American community is heavy. The solution lies in ensuring that women have access to quality medical care and that girls grow to adulthood in an environment that supports them to eat a nutritious diet, get adequate exercise, manage chronic conditions like diabetes and HIV, cope with stress, and enjoy overall mental health.

Improve the health of African American men. An African American baby boy born today in Louisiana can expect to live 68.1 years and in Mississippi, 68.2 years. This is a life span shorter than that of the average American in 1960 and on par with that of men in Azerbaijan, Egypt, and Jamaica today. African American men in Mississippi and Louisiana die at higher rates than white men from the leading causes of death – heart disease, cancer, and stroke – as well as from other causes like homicide, accidents, diabetes, and HIV/AIDS. The premature loss of African American men is a source of heartbreak as well as economic distress for Gulf Coast families and communities.

Improve access to mental health services in Louisiana. Prior to the 2005 hurricane season, the mental health system in Louisiana was not able to meet the needs of many who needed its services. The traumatic events of 2005 coupled with the long-term displacement and upheaval that so many families have experienced in the interim have strained this already overburdened and under-resourced mental health system to the breaking point. Children and adults in psychological distress need help to recover from traumatic events and to manage persistent and severe mental illness if they are to live lives of well-being, choice, and opportunity – and many are not getting this help.

Dramatically reduce the homicide rate in Louisiana. The homicide rate in Louisiana is nearly three times the national average and more like the rates in countries like Nicaragua and Swaziland than those of its peer states. The vast majority of the dead are African American teenage boys and young men killed by guns. This extraordinarily high rate of violent death constitutes a public health emergency. One proven way to address this crisis is to improve educational outcomes, ensuring that all youth get a quality education and complete high school as a minimum.

Education

Improve the quality and quantity of education. Both states have some of the lowest scores on most measures of primary and secondary educational quality and one in five adults in Louisiana and Mississippi has not completed high school. Education is the engine of opportunity and a key determinant of income, health, and crime outcomes. Research jointly conducted by the American Human Development Project and United Way (2009) suggests that if all adults in Louisiana had at least a high school diploma,

- about 85,000 fewer Louisianans would live in poverty;
- median personal earnings would increase by more than $1,700 per year;

- there would be 62 fewer murders, and 10,000 fewer people would be behind bars;
- 300 fewer babies would be imperiled by low birth weight;
- 28,000 fewer adults would be obese;

In Mississippi, connect at-risk boys to school. About a third of Mississippi's African American men over 25 do not have a high school diploma. And today, still greater numbers of African American boys are leaving high school without graduating. Without a high school diploma, prison becomes a far likelier destination than college. The high rate of juvenile detention in Mississippi, especially for nonviolent offenses, is a worrisome impediment to long-term ability of African American boys to become productive members of society.

Income

Ensure that working families can make ends meet by closing the earnings gap. White men on average earn $5,000 more per year in Mississippi and $8,400 more per year in Louisiana than the typical American worker. White women, African American men, and African American women earn drastically less. Since most two-parent families rely on two incomes and a large share of both states' families is headed by single women, this wage gap translates into a well-being and opportunity gap for too many Gulf Coast residents. Other states help working families meet a basic monthly budget with such successful programs and policies as a state-earned income tax credit, state minimum wages, affordable housing, affordable healthcare options, and subsidized childcare. Such policies help to create an infrastructure of opportunity for all in Louisiana and Mississippi.

Conclusion

This analysis of the well-being of Louisianans and Mississippians by place, race, and gender found that significant human development gaps separate different parts of the states, African Americans and whites, and women and men. Though Louisiana and Mississippi overall are at the bottom of the US ranking, some population groups in the states enjoy levels of human well-being similar to that found in top-ranked states like Connecticut and Massachusetts, whereas the opportunities of others are constrained by comparatively poor health and by levels of educational attainment and personal earnings typical of the average American 30, 40, even 50 years ago.

For individuals, health, education, and a decent standard of living are critical building blocks of a life of choice, value, and dignity. These basic capabilities allow people to invest in themselves and their families and to reach their full potential. But investing in people is not just good for individual Louisianans and Mississippians. It is also necessary for the economic growth and future competitiveness of the states

in the fast-changing, knowledge-based, global marketplace. Thus, the significant racial disparities that can be observed in the HD Index and the earnings gap between women and men are impediments to the enhanced well-being of everyone in the region.

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Chapter 7
The Metropolitan Philadelphia Indicators Project: Measuring a Diverse Region

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Abstract The Metropolitan Philadelphia Indicators Project (MPIP) is a multidisciplinary research initiative that gathers and makes available data describing the Philadelphia Metropolitan Region. Comprised of 353 municipalities in nine counties that span Pennsylvania and New Jersey, the region is a rich and diverse area that has benefitted from the creation and growth of a social indicators project. To accurately characterize the region, identify changes and trends, and predict how the region might look in the future, MPIP gathers social indicators from an array of subject areas that include the economy, health, criminal justice, housing, and others. In efforts to see that its data are used effectively to benefit the region and influence policy, MPIP actively engages in partnerships with regional organizations by providing data, developing research methodology, and conducting analyses. This chapter describes the conception of MPIP, the composition of the region it serves, and the data and services provided by the Project. Additionally, the challenges encountered by MPIP are discussed, along with the projected future directions of the Project.

Introduction

The Metropolitan Philadelphia Indicators Project (MPIP) is one of a small number of indicator projects in the United States that have acknowledged the enormous variation among suburban communities and have systematically built that variation into the information base used to track regional change. In June 2003, four Temple University faculty with disciplinary backgrounds in geography, political science, and sociology began MPIP with funding from the William Penn Foundation.

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The project emerged from a conviction shared by university researchers, foundation representatives, and nonprofit leaders that the many activities and projects aimed at strengthening the region's communities could be more effective if supported by reliable, up-to-date information about *regional* conditions. In order to "think regionally while acting locally," people require information that can help them connect their local work to broader patterns and trends. MPIP's objectives are linked to providing a rich collection of social indicators data for the region's municipalities to facilitate considerations of public policy and research on urban structures and processes, while also allowing for the comparison of the region as a whole with other metropolitan areas. The projected users are community organizations, regional nonprofits, local governmental agencies, and both faculty and students in the academic community. Identified in 2007 by the Arizona Republic as one of six national models of indicators projects, MPIP has grown into a comprehensive initiative that takes an active role in gathering and disseminating social indicators data to regional stakeholders.

Philadelphia is a particularly challenging region for an indicators project. It contains 353 municipalities spread across nine counties (including the city/county of Philadelphia) and two states, Pennsylvania and New Jersey. The region's municipalities constitute the largest number within a single metropolitan area in the United States. Yet if the region represents a somewhat extreme case, similar fragmentation characterizes many of the nation's metropolitan areas and complicates considerations of public policy at the municipal, regional, and, often, state levels. Fragmentation also shapes private decision making because nonprofits, businesses, and households must consider how best to organize their affairs where opportunities and challenges may vary significantly from place to place. But whether public or private decision making is at issue, MPIP seeks to provide a common base of information that decision makers can rely upon.

The data for the Metropolitan Philadelphia Indicators Project are collected from federal, state, and regional governmental agencies, quasi-public agencies, and nonprofit organizations. Currently, MPIP gathers more than 350 indicators in some 16 subject areas, and most are collected annually. The selection of indicators is guided by four principles: (1) they must measure meaningful dimensions of community life; (2) they must be comparably available at the community level for both Pennsylvania and New Jersey; (3) they must be credible and reliable over time; and (4) they must help us compare the Philadelphia region with other metropolitan areas. As stated previously, although the fundamental unit of analysis is the municipality, we also gather information at several other levels of aggregation including census tracts, elementary and high school districts, and zip codes. From its inception, MPIP has been organized to track and analyze changes and, accordingly, it annually updates many of its indicators.

At the regional level, MPIP also gathers data for eight other metropolitan areas, selected to represent a range of different developmental paths and timing, to facilitate regional comparisons. They are Baltimore, Boston, Chicago, Cleveland, Detroit, Minneapolis, Pittsburgh, and Phoenix. In this era of place-based rankings, leaders in government, business, and the nonprofit world are always conscious of this

region's competitive position among the nation's major metropolitan areas. MPIP's metro comparisons help them to monitor the region's position relative to similar metro areas in each of the 16 subject areas of indicators. Data for the metropolitan comparisons are presented over multiple years so that trends of regional indicators can be compared across the regions.

When seeking a partner to provide reliable data for all the communities in the region, the foundation preferred to place the project at a university (rather than at a public interest or advocacy organization) because the university is aligned with no particular political position in the policy domains related to these indicators. It made sense for the foundation to collaborate with the region's main state-supported university whose mission includes serving communities and advancing their social and economic development. Over the years, Temple University has contributed faculty time, office space, and some administrative support, and has also fielded large-scale opinion surveys to gain attitude data that complements the project's indicators. However, like most indicator projects, this one must constantly seek external funds as the main source of its support.

The Philadelphia Metropolitan Region

Nested along the Delaware River in southeast Pennsylvania and southwestern New Jersey, the region includes the nine counties of Bucks, Chester, Delaware, Montgomery, and Philadelphia in Pennsylvania, and Burlington, Camden, Gloucester, and Salem in New Jersey (see Fig. 7.1).

Home to more than 5.1 million residents, the region is predominantly White (3,583,048), with sizeable Black (1,008,171) and Hispanic (258,606) populations that speak of the diversity of the area, based on 2000 US Census data.

An examination of social indicators that describe the region reveals municipalities that are not only widely disparate, but rapidly changing. The divergent trajectories of social indicators in the Philadelphia metropolitan region can best be illustrated by the population change within the counties of the region from 1940 to 2000. Philadelphia County, which includes only the city of Philadelphia, experienced a 21.4% decline in its population over that 60-year period, a decline of more than one-fifth of its population. In contrast, the eight suburban counties experienced population growth ranging from 52 to 455% across the same period (Adams, Bartelt, Elesh, & Goldstein, 2008). The differing population changes among the counties of the region resulted in a net population loss in the 1980s, an increase of 3% in the 1990s, and more recently, a gain of nearly 4% between 2005 and 2007 (MPIP, 2009).

The successful interpretation of information on a regional level requires the development of a typology to capture communities' similarities and differences. The region's 353 municipalities vary enormously in terms of population size, diversity, socioeconomic status, economic structure, physical characteristics, land use, and many other factors. In the past, analyses of metropolitan areas compared central cities with their suburbs, but the large number and diversity of Philadelphia's suburban municipalities point to the poverty of these comparisons.

Fig. 7.1 The nine counties that make up the Philadelphia metropolitan region

Virtually all researchers who study urban regions have recognized the need to refine the catch-all term "suburbs" to reflect the wide disparities among different types of communities labeled "suburbs." For example, the Brookings Institution's Metropolitan Policy Program has explored how the challenges facing older suburban communities differ from those encountered in still-growing suburbs (Puentes & Warren, 2006). Even designations like "inner ring suburbs" or "first suburbs" mask important differences between stressed older communities with stagnating housing markets and underfunded schools versus older suburbs with walkable main streets, desirable housing, and amenities that still appeal to home buyers. It is one thing to recognize in theory that such variability exists. It is another to collect, organize, and systematically apply community-level data to explore patterns and trends in metropolitan areas. Most analyses of US metropolitan areas use county boundaries to delineate the suburban portion of urban regions (perhaps that is because the federal government uses counties as the building blocks for its definitions of metropolitan statistical units). Yet a countywide average tells us little about the immense variation between the communities located within that individual county.

To recognize these municipal-level differences, MPIP created a typology of five kinds of communities where communities were defined differently for the city and

suburbs. To define communities in the city of Philadelphia, MPIP used the 12 planning analysis districts which the Philadelphia City Planning Commission has historically used in its work; in the suburbs, the communities were the municipalities. The typology derived from a two-stage cluster analysis of 13 variables from the 2000 Census describing a community's housing, socioeconomic, and household characteristics.[1] We termed the five types Urban Centers, Established Towns, Stable Working Communities, Middle Class Suburbs, and Affluent Suburbs. Urban Centers largely developed as high-density places organized around commerce and manufacturing. A prominent example is Camden, NJ, which once was home to both Campbell Soup and RCA Victor. Established Towns are places with clearly defined commercial centers and excellent service by the regional rail system; although their housing stock often predates 1940, they are predominately middle class in population composition. Stable Working Communities include many older communities on both sides of the Delaware River and working-class boroughs elsewhere in the region. Much of their housing stock is pre-1940 and there is little recent construction. Relative to Urban Centers, they have more detached, single-family homes and higher levels of home ownership. In education and female-headed families, they lie between Urban Centers and Middle and Affluent Suburbs. Middle Class Suburbs have the highest levels of detached, single-family homes, are often at the region's periphery, and, if at the periphery, have seen significant growth in the past two decades. Levels of education are below that of Affluent Suburbs. The latter are clustered in the middle of the region and have the highest levels of education and lowest percentage of female-headed families. Typically, they have higher population density than Middle Class Suburbs because of a greater diversity of housing types. Confirming the diversity of different parts of the city, the 12 Planning Analysis Districts were placed in three of the five community types. Figure 7.2 shows the location of these places within the metropolitan area.

The map in Fig. 7.2 is instructive with respect to several generalizations often repeated by policy makers and urbanists. First, it shows that the frequent characterization of "inner ring" suburbs as troubled fails to acknowledge a considerably more complex reality: some of these inner suburbs are among the most affluent in the region. Second, socioeconomic status of the suburbs does not increase with distance from the city as the most affluent communities tend to fall in a broad band that begins quite close to the city limits. Third, the majority of the Middle Class Suburbs

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[1] Thirteen variables were used: five housing, six socioeconomic, and two household characteristics. The housing variables were percent of units built before 1940, percent of units built after 1995, percent vacant, percent detached single units, and percent owner-occupied; the socioeconomic variables were percent black, percent with less than a high school education, percent with a bachelor's degree or better, percent of persons less than 150% of the poverty line, percent working outside municipality of residence, and percent males unemployed; the household variables were percent of families with children under 18 and percent of families which were female-headed. The typology was validated through replication with an alternative statistical methodology and by sending it for "on the ground" checking by county planning officials. As a result of the latter, five of the communities were reclassified.
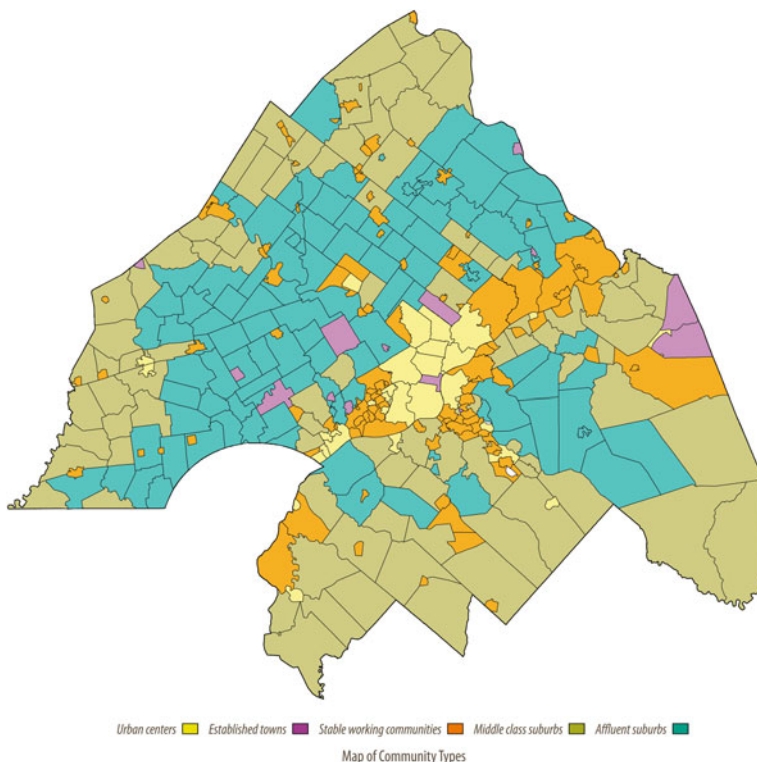
Urban centers ☐ Established towns ☐ Stable working communities ☐ Middle class suburbs ☐ Affluent suburbs ☐

Map of Community Types

Fig. 7.2 The five community-types in the Philadelphia metropolitan region

lie at the further reaches of the metropolitan area; these are the most rapidly growing parts of the region. Fourth, what we have called Stable Working Communities are scattered throughout the region.

Building the Database

We have already made reference to the diverse and ever-changing patterns in the region, which require the use of careful and continuously updated information to measure progress or decline. The accessibility of a wide range of social indicators made available at relatively small levels of aggregation provides researchers, organizations, and other stakeholders in the region with information that can be used to examine their local communities. MPIP strives to fulfill this role by providing interested parties with easily accessible social indicators data and through collaborations with local organizations that wish to more clearly understand the region. As a result of these initiatives, MPIP has emerged as the primary source for social indicators data in the Philadelphia Metropolitan Region. All of MPIP's indicators can be downloaded from the project website at no cost to the user.

Because the region encompasses two states, MPIP pays particular attention to insuring that the data are comparable across all of the region's communities and over time. For example, New Jersey and Pennsylvania have very different state and municipal tax systems – a fact which required MPIP to develop a methodology to create comparable measures of the tax burden in the two states' municipalities. Similarly, since the two states use different tests to assess reading and math skills and score their tests differently, MPIP created a methodology to obtain comparable scores for all school districts. As the project is now in its sixth year of operation and produces time series for many variables, we also must be alert to changes in an indicator's definition or coverage.

Figure 7.3 lists the subject areas of social indicators collected by MPIP and a selection of the indicators that are available within each subject area.

The sample of available indicators presented in Fig. 7.3 attests to the varied subject areas of social processes captured by the indicators collected and made available by MPIP. These include commonly analyzed economic and housing indicators from the US Census, as well as data describing the arts and culture and nonprofit

Subject Area	Indicator	Source
Demographics	Total population	US Census
	% of population age 65 and older	–
	Latino population	–
Households & Family	# of babies born to teenage mothers	PA & NJ Depts of Health
	# of households with no children	US Census
	Average household size	–
Income & Poverty	Median household income	US Census
	% of individuals with income below the poverty level	–
	# of households that are low income	–
Housing & Residental Development	% of all loans made by subprime lenders	Home Mortgage Disclosure Act
	Total building permits	US Census
	# of housing units	–
Transportation	% of households owning no car	US Census
	# of stores in shopping centers	ESRI Business Solutions
	Ratio of road miles to square miles	NJ & PA Depts of Transportation
Economy	Average annual wage	NJ & PA Depts of Labor
	Total employment	–
	Total # of establishments	–
Government & Taxes	Local tax revenue per household	NJ Dept of Community Affairs;
	Change in municipal revenue, 1998 to 2003	PA Dept of Community and
	Average per capita municipal debt, 2002-03	Economic Development
Education	# enrolled in school, kindergarten to grade 12, age 3+	US Census
	Average SAT math score	NJ & PA Depts of Education
	% of high school students leaving high school	–
Civic Participation	# of voters, gubernatorial election	NJ Commission on Elections;
	% of registered voters voting in presidential election	Bucks, Chester, Delaware, Montgomery and
	% of eligible voters voting in presidential election	Philadelphia County Boards of Elections
Environment & Land Use	Area square miles	US Census
	Total livable area	Delaware Valley Regional Planning commission
	% of commercial area	–

Fig. 7.3 Selected social indicators available from MPIP

Arts & Culture	Federal and state funding for arts and culture	National Endowment for the Arts;
	Total revenue arts and culture	National Endowment for the Humanities
	Total payroll paid arts and culture	Institute of Museum and Library Services; NJ and PA State Councils on the Arts
Health	% of babies born at low birth weight	PA and NJ Depts Of Health;
	# of non-profit health and human service organizations	National Center for Charitable Statistics
	% of population who are Medicaid recipients	NJ Dept of Human Services; PA Dept of Public Welfare
Public Safety	Violent crimes per 1,000 residents	NJ & PA Uniform Crime Reports
	Property crimes per 1,000 residents	–
Language & Nationality	# of foreign born Latinos	US Census
	% of population that is Asian	–
	% of households that are linguistically isolated	–
Labor Force & Educational Attainment	# of returns filed by new tax payers	Internal Revenue Service
	% of pop 25 years + with a BA or higher	US Census
	% of males aged 25 to 64 not in the labor force	–
Non-Profit Sector	Total payroll paid public benefit	National Center for Charitable Statistics
	Total revenue religion	–
	End of year liabilities human services	–

Fig. 7.3 (continued)

sectors that are much less prevalent in studies of the region. Similarly, the indicators are gathered from a variety of organizations, some of which do not make their data publicly available. For these data, MPIP serves as the only public source for these indicators in the region. With access to such a plethora of social indicators, researchers who are analyzing the region and its communities can estimate and control for the effects of relatively underutilized data elements. The resultant research and subsequent policy implications stemming from studies that include the data provided by MPIP, to be described later in this chapter, demonstrate the benefits that are gleaned from such a rich collection of social indicators data.

Reaching MPIP's Publics

MPIP is designed to serve users ranging in sophistication from the person seeking a few facts and knowing little more about computer software than how to use a browser to the academic researcher with a substantial statistical background seeking data for a research project. Accordingly, it makes its data available in a variety of forms. However, its most powerful tool is its *MetroPhilaMapper* browser-based mapping and data analysis application.

MetroPhilaMapper

Social indicators projects must constantly work to provide interesting and interpretable data. This is not always an easy task to accomplish when considering the quickness with which audience members can lose interest during presentations that

include a great deal of numbers and statistics. Recent innovations in computing and GIS technology, however, have provided tools to combat these issues. As Philips (2003, p. 39) cogently notes, "Integrating indicators with visual aids, such as maps, graphs, and charts... can provide a stimulus that encourages immediate response and action."

Beginning in 2007, MPIP partnered with Avencia Incorporated, a GIS software development firm specializing in web-based geographic analysis and visualization applications, to pioneer a web-based mapping utility called *MetroPhilaMapper*. The primary purpose of *MetroPhilaMapper* is to make MPIP's large quantity of regional data freely available to the public for everything from academic and public policy research to personal curiosity and general interest. The user-friendly interface of the MPIP website allows individuals to easily find, map, and download social indicator data, while also providing the opportunity to run simple descriptive and comparative data analyses.

MetroPhilaMapper allows users to access MPIP's data in both map and table form. The mapping functions allow users to graphically present any of MPIP's indicators using a choropleth map. These functions also allow users to manipulate the resulting map using many of the most common features typically available in expensive GIS software packages. The user can choose to display the data in quantiles or equal intervals, by standard deviation or by choosing custom break points. Maps can be further customized by adding additional layers which provide a context for the data. These layers include roads, rails, water, and parks. Once a user creates a map, she/he can download the image for use in her/his own documents and presentations.

Figure 7.4 presents a choropleth map made with *MetroPhilaMapper* that shows the average adjusted gross income of the 353 municipalities in the Philadelphia
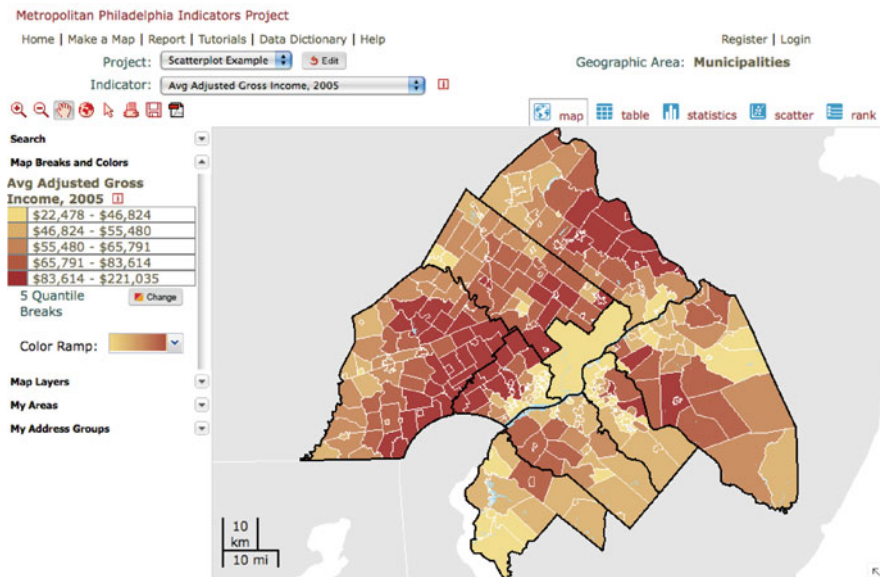

Fig. 7.4 Choropleth map of average adjusted gross income in 2005, by municipality

region in 2005. It is interesting to note the low value of this indicator in Philadelphia, with higher values adjacent to the southwest of the city and lower values again on the outskirts of the region. The clustering of income across the region illustrates the utility of mapping indicators, as patterns like this may not be as easily identifiable when looking only at indicators in a database.

MetroPhilaMapper also allows users to incorporate their own data into maps made using MPIP's indicators. Users can upload a list of up to 250 addresses at a time and then display any of MPIP's indicator data underneath those points. This powerful function allows users to tell complicated stories and gain insight into the work they are doing; schools can show the types of communities they draw their students from; nonprofits can describe the communities they work in; government administrators can display where their clients are coming from.

The database function, on the other hand, displays the data as a table rather than as a map. Users can manipulate tabular data by sorting it in ascending or descending order. Users can also filter the data, only displaying geographies where an indicator falls between two predefined values. For example, a housing researcher may want only to look at census tracts where the average mortgage was between $100,000 and $200,000. Tabular data can be downloaded in several formats, including SPSS, Access, and Excel.

Along with the mapping and table functions, *MetroPhilaMapper* also provides users with the ability to present summary statistics and a histogram of any of the available indicators. A scatterplot function allows users to display comparative trend data for up to three indicators simultaneously. The first and second indicators are displayed on the *x* and *y* axes. When a third indicator is added, its magnitude is represented by the size of the dot on the scatterplot.

Figure 7.5 presents a three-item scatterplot that describes the relationship between average adjusted gross income, average mortgage loan, and the percent of the population 25 years or older with a B.A. or higher.

The positive relationship between the average mortgage loan and gross income variables on the *x* and *y* axes indicate the correlation between the two indicators. The addition of an education indicator as the third item in the scatterplot provides even more information in this display by showing that municipalities with higher average adjusted gross income and mortgage loan values typically have a higher percentage of residents with a B.A. or higher, as shown from the larger circles on the upper-right portion of the scatterplot. The ability to create three-part scatterplots like the one shown in Fig. 7.5 can enhance understanding of the ways in which regional indicators interact and are distributed across space. It also allows users to present the data in an easily interpretable format.

Not all users are interested in the region as a whole. *MetroPhilaMapper* makes it possible to create custom areas, so that users can focus on a subsection of the region. If a user is only interested in communities in Montgomery County, for example, he or she may select the municipalities within that county by creating a custom area. This custom area can then be used to either create a map of this subsection of the region or report the aggregated values for the geographies within this subsection.
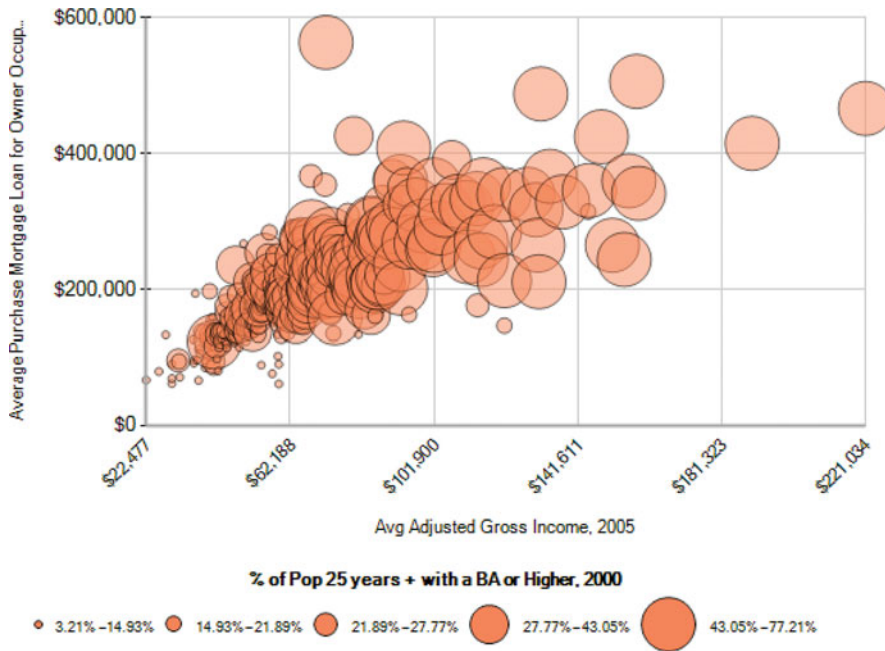
Fig. 7.5 Three-item scatterplot of average adjusted gross income, average mortgage loan, and percent of the population 25 years or older with a B.A. or higher, by municipality

Given all the custom data and map manipulation that a user can perform using *MetroPhilaMapper*, the application gives users the option of creating a free, personal account with the site. Once users have an account, they can save their work and access it from any computer with an internet connection. The ultimate goal of *MetroPhilaMapper* is to provide easy access to reliable data and to allow a non-expert user to make state-of-the-art maps without the need for expensive software or extensive training.

A glimpse at the number of users of *MetroPhilaMapper* illustrates the utility of this web-based tool for MPIP's audience. As of December 2009, there were 725 registered users for *MetroPhilaMapper*; 400 were from educational organizations, 170 were from nonprofit organizations, 53 were from government organizations, 90 were from private firms, 7 were from philanthropic organizations, and 5 did not identify their user type. In addition to our registered users, we also have guest users who have full access to our site but are not able to save their work and access it later. We have had 1,318 guest users on the site since September 1, 2008. Perhaps an even bigger testament to the success of *MetroPhilaMapper* is the knowledge that the number of users has increased by an average of 31 per month since January 2009.

In addition to tracking our *MetroPhilaMapper* users, we also track how they engage with the site. This helps us better understand what types of information are

useful for our users. It also helps us understand which indicators are not as useful or could benefit from better marketing. The most commonly used indicator is the percentage of individuals with income below the poverty level. This indicator appeared in 267 models that users constructed. Median household income, the number of individuals with income below the poverty line, the percentage of the population aged 25 or older with at least a bachelor's degree and total population were also used over 100 times.

Publications

While *MetroPhilaMapper* gives interested audiences access to a wealth of raw data, MPIP's publications provide an analysis of these data, highlighting trends and changes in the region. MPIP's primary publication is an annual report that focuses on indicators representing a dozen dimensions of the region's well-being. The annual reports began in 2004 and have been released every year since with the exception of 2007. Starting in 2008, the annual report reported fewer indicators and began tracking change over time among a select set of indicators. The hope is that this more streamlined report tells a clearer story about trends in the region, while *MetroPhilaMapper* functions as the robust repository for all data. In addition to the analysis of regional trends and dynamics within individual local communities, the annual report monitors how greater Philadelphia compares with eight other metropolitan areas, four of which are flourishing regions that serve as models (Boston, Chicago, Minneapolis, and Phoenix), two of which are older industrial areas similar to ours (Detroit and Cleveland), and two of which are regional competitors (Baltimore and Pittsburgh).

MPIP also publishes a series of shorter "focus reports," each highlighting a particular issue. Often undertaken in partnership with civic organizations, they provide a closer look at a collection of indicators surrounding a specific regional concern. In an effort to respond to the demand for more immediate responses to current events, MPIP also releases two-page policy briefs that focus on a specific topic discussed currently. This type of report allows for a quick response to a current controversy. For example, amidst a debate about a proposal to levy a tax on tickets to arts and culture events, MPIP released a nonpartisan description of the debate accompanied by a point map of arts and culture locations across the region to illustrate the communities within the region that would feel the greatest impact from the proposed tax.

To both disseminate policy briefs and inform potential users of new data availability and/or website functionality, the project stays connected to its constituency through a monthly newsletter. This simple platform provides a way to update frequent users and to remind infrequent users and potential users of MPIP's presence. MPIP uses software that allows organizations to send simply formatted newsletters and to track usage of the newsletter (such as popular links). This, along with the tracking of website usage, provides important user feedback about its publications.

MPIP and the Community

Many of MPIP's users work within civic organizations, and often those with a regional scope. They need information to guide their actions, to justify funding proposals, to inform public audiences about important trends, and to lobby legislators to improve conditions in the region's communities. Most civic organizations do not have the ability to create this information in-house and lack the budget to acquire it. MPIP fulfills this role, often at no cost. MPIP also serves citizens and citizen groups seeking information about conditions and trends within their own areas, and how their areas compare to other regional communities. A third audience is government users, including township officials in the suburbs whose current information resources are inadequate to the planning and services which they are expected to provide. Gaining access to reliable information that puts their own community conditions into a regional perspective helps local officials predict the intended or unintended consequences of their actions.

MPIP invests considerable effort to ensure that its work is utilized by all entities that might benefit from the services it provides. These efforts include:

- conducting information sessions to increase community awareness about the project,
- holding *MetroPhilaMapper* trainings,
- disseminating data to interested parties,
- collaborating with local organizations, and
- engaging in longer-term partnerships with local organizations that often involve the sharing of data and resources to pursue comprehensive research agendas.

These collaborations and partnerships have enabled MPIP to carve out an important niche within the region as a vital resource for information that describes the region's communities. Below we describe several examples of the ways in which MPIP has worked with the community and participated in projects that aimed to showcase the importance of social indicators research and influence policy.

Partnerships and Collaborations

Regional stakeholders realize that the availability of social indicator data is necessary so that interested parties in different roles and locations can debate issues constructively using a common information base. Many nonprofit and governmental organizations, however, have limited research capacity. Even given access through *MetroPhilaMapper* to a large database and sophisticated software, these organizations often need MPIP's help to frame research questions and to analyze and interpret data which address those questions. MPIP thus increases the effectiveness and efficiency of the network of organizations we serve. By participating regularly in academic, nonprofit, and government research networks, MPIP is able to maintain

its status as an honest broker of impartial data, while strengthening the research capabilities of the region's civic institutions. A few examples demonstrate MPIP's civic partnerships, most of which involve organizations working at the metropolitan level to foster regional solutions to public problems.

MPIP collaborated with Public Citizens for Children and Youth to show a dozen suburban state legislators and their staff members the risks faced by children and adolescents living in suburban communities (e.g., school failure, teen pregnancy, school violence). These are problems normally associated with inner cities, yet they exist in many suburban communities. MPIP's maps overlaid legislative district boundaries on indicator maps, giving each public official a picture of conditions in his or her district. Staff members from our nonprofit partner then followed up by outlining the programs it had established to address the problems facing children in both the city and suburbs, cultivating the legislators' support for changes that can benefit their own constituents as well as residents of the central city.

In collaboration with another civic partner, Ten Thousand Friends of Pennsylvania, MPIP prepared a report to show state officials and other audiences the benefits of regional rail investments. The report, which was presented at several public meetings, used social indicators to examine the regional rail system as a community asset that benefits the households of the region. In particular, MPIP examined the relationships between rail ridership and housing values, community tax bases, and community vitality.

Yet another example is MPIP's demographic analysis in partnership with Graduate Philadelphia, an organization working to increase college completion rates among adults. Although that organization's emphasis had traditionally been on college completion rates among city residents, it recently decided to extend its work into the suburbs, where there are also many individuals with some college credits but no completed degree. MPIP's work analyzing and mapping education and other indicators showed surprising and troubling gaps between college completion rates of men and women, allowing our partner organization to craft somewhat different strategies for men and women.

More recently, MPIP has seen interest in a promising form of collaboration based on the utility of *MetroPhilaMapper* itself. MPIP developed a partnership with the regionally-based Public Health Management Corporation (PHMC) based on the mutually beneficial practice of incorporating select indicators from the results of PHMC's biennial health survey into *MetroPhilaMapper's* database. This collaboration adds valuable data to the database while alerting *MetroPhilaMapper's* users to PHMC as a source of regional health data and providing a link directly to the organization's website.

Occasionally, MPIP's civic partners have small-scale community agendas (as opposed to regional agendas). One such partner was a community development coalition working to improve youth services in a poor area of North Philadelphia–Eastern North Philadelphia Youth Services. MPIP collected demographic, health, crime, housing, and education data from the various census tracts that comprise the organization's service area, and then drafted a report in collaboration with our partners. Aimed at policy makers, the report systematically described the problems

facing young people living in the area, and called for more and different services to help them. In almost every project, MPIP's starting challenge is to help our civic partners to identify important research questions that can be illuminated by data analysis and mapping. This takes a surprisingly long time in many cases. Once we have clarified those research questions, MPIP serves as analyst and advisor or disseminator, while our partner organization identifies the policies and strategies for which they will advocate and communicates those messages to public audiences.

Staffing

A great strength of MPIP is its staff. In addition to four principal investigators, the project also employs a full-time project manager and three part-time research assistants. Staff members have been trained in a wide range of disciplines that include geography, sociology, political science, and criminal justice, providing the project with multiple perspectives. The diverse staff brings a myriad of skill sets that are necessary for the success of the project, such as data mining, graphic design, knowledge of GIS, and data analysis.

Challenges

MPIP contends with several challenges as the preeminent source of social indicators data in its region. Perhaps the most pressing issue is ensuring that the data and services provided by MPIP are fully utilized. Holden (2009: 430) succinctly makes this point: "The major challenge facing urban indicators movement internationally is to successfully incorporate the collection and reporting of indicators into decision-making processes." This issue, widely recognized by the indicators research community, is at the forefront of MPIP's consciousness and has directly shaped the ways in which MPIP has evolved. To address this concern, MPIP continually seeks to make regional organizations aware of its capabilities. The partnerships described earlier outline a few examples of the ways in which MPIP has partnered with regional stakeholders to improve the municipalities within the region. In the future, MPIP will focus even more attention on collaborating with local groups to increase the policy applications of its work.

Related to the issue of policy influence is the difficulty in defining the success of a social indicators project. In addition to the task of objectively monitoring the current state and trajectories of the social world, funding entities require that the social indicators data collected be used to effect positive change within the region. Due to its role as a collector and broker of information, MPIP's success is often based on the ability of its partners to influence policy. The nature of many of these partnerships means the responsibility for the effective use of MPIP's work and data lies with the partners. As a result, the identification of policy-changing research products as a metric of success for the project is largely inaccurate and even unfair. For this reason, MPIP is best seen as a utility for regional organizations.

While an indicators project is generally crafted around its own mission and goals (provided they are unambiguously laid out at some point), it also will reflect the interests of current and potential funders. Funding may come from government or foundations, nonprofit grants, private sponsorship, and/or fees for service. One complicating factor is that a project may raise money from multiple sources, each with its own specific agenda. Furthermore, funding for indicators projects tends to be time-specific. Therefore, funding sources may change over time, creating inevitable shifts in project goals and directions.

Another significant question confronting our indicators project is one that affects any organization concerned with the dissemination of information: What is the most effective method for communicating with the public? As is the case with nearly all organizations historically releasing printed publications, MPIP has recognized the need to present its releases and publications as downloadable files available on its website. Adapting to new forms of media has proven to be essential to the survival of such a project. There are several reasons why it is not an easy task for an indicators project to adapt to a media market that includes a 24-hour news cycle and a blogosphere that instantly addresses most relevant issues. First, much of the reliable data available coming from administrative sources takes time to assemble, clean, and present to the public. Oftentimes, an administrative source will take several months or a year to make data available. Even then, it is the project's task to clean and present the data in a way that suits its purposes. Second, once the data are cleaned, it takes time to provide thoughtful and provocative commentary on relevant issues and public debates. For a project that releases an annual report covering multiple indicators from multiple dimensions of social life, the publication date of the report is only as early as the indicator that took the longest to collect, assemble, and discuss. To meet this challenge, MPIP has found it important to increase its agility through the use of non-print releases that can be assembled and distributed quickly. In another effort to react to current issues quickly, MPIP staff has begun to monitor the blogosphere for relevant discussions and, where appropriate, provide commentary and/or direct users to the MPIP website.

Looking Forward

Based on the aforementioned challenges and the ongoing mission of MPIP to provide the region with data of the highest quality and breadth, MPIP is moving forward with several goals in mind. These include reducing costs while increasing the scope of the data we collect. And as has already been stated, perhaps the greatest challenge facing MPIP, and social indicators projects in general, is using social indicators data to spur positive change within region. None of these goals are easy to achieve, but they have been embedded into the operation of MPIP so that slow, but steady, improvements can be made.

The expansion of the project into new functionalities is primarily guided by the demand from its users, including public policy and government organizations. For example, MPIP recently responded to requests for data at more detailed geographies

by adding census tract data to the database and mapping utility. Furthermore, the overwhelming interest in state senatorial and legislative districts has prompted the addition of a map overlay and the impending release of data at these geographic levels.

Reducing costs and streamlining operations is an ever-present goal of all organizations, especially in light of today's economic climate. In recent years, a desire to become more environmentally conscious has also influenced businesses to reduce paper and energy costs. Both of these goals are important to MPIP, and thankfully, are not mutually exclusive. As an example of such an environmental consideration, MPIP is currently discussing the possible reduction of the size of its print publications in order to conserve funds and reduce the amount of paper consumed. In recognition of the proliferation of internet usage and the new ways in which individuals receive information, additional materials that are necessarily left out of smaller print reports will be offered on the MPIP website. This is consistent with our current practice of offering policy briefs via email and through our website.

In addition to updating its current social indicators, MPIP actively seeks to expand the subject areas and indicators that it provides. This often occurs as a result of new civic partnerships. For example, in 2009 MPIP began to work more closely with the Pennsylvania Commission on Crime and Delinquency (PCCD). PCCD is interested in enhancing its ability to visualize and disseminate its data statewide. To explore how this could work, MPIP partnered with PCCD in a pilot project using *MetroPhilaMapper*. PCCD will evaluate *MetroPhilaMapper* to determine whether to offer a version of *MetroPhilaMapper* statewide.

The rapid development of mapping software capability, which is in many ways responsible for the current resurgence of indicators projects, serves as both a challenge and an opportunity to MPIP. Although *MetroPhilaMapper* is a success, MPIP constantly seeks to improve its functionality and design in collaboration with our corporate software partner, Avencia Inc. Partnering with a cutting-edge software development corporation helps to insure that *MetroPhilaMapper's* functionality and ease of use is state of the art.

Solving the problems facing local communities often requires state funds or policy changes – for example, improving student achievement in public schools; making quality childcare affordable to more families; revitalizing aging retail corridors in the city and in older suburbs; multiplying transit options that reduce pollution and energy consumption; preserving open space in densely developed areas; building affordable housing close to the region's job centers; and rationalizing unfair and outmoded local tax systems. All of these challenges are regional in scope. And all are currently being pursued by activists who are looking to state government for help. Working with a number of regional activists, we have concluded that the best way to engage state legislators in solving problems is to show them how such problems affect their own districts, that is, the communities and households they represent. To communicate effectively with the state legislature, regional activists must bring state or regional issues down to the local level. MPIP is well positioned to help policy advocates accomplish that, using our large storehouse of data collected at local geographic scales.

In addition to pursuing this new initiative, MPIP will continue to provide updated and objective information about community conditions via our annual report, *Where We Stand*, and our interactive web platform, *MetroPhilaMapper*. MPIP's continually improving website makes it possible for users throughout the region to obtain information and create maps portraying social, economic, and environmental conditions within their own communities and across the entire metropolitan area. MPIP will continue to make this vast amount of information available for free to all types of users from school students to community activists, public interest advocates, and county and township planners. In addition, MPIP will continue to support the work of its civic partners by providing raw data and analyses.

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Chapter 8
Portraits of Peel – A Community Indicators Portal Project

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Abstract Demographic, health, and socioeconomic indicators are useful and significant for understanding the quality of life of a population. They are also useful for understanding the needs of a population. The main purpose of "Portraits of Peel (POP)" is to create a new and unique level of information within the Peel community. This chapter highlights the Social Planning Council of Peel's (SPCP's) experience with the development, implementation, and public policy impact of its three portals: Portraits of Peel Online Database, Target Group Profiles, and Peel Statistics. These portals are located at the Portraits of Peel web site at www.portraitsofpeel.ca. POP is a virtual place that social service agencies, community groups, and ordinary citizens can go to for easy access to information on the characteristics of the Peel population at different geographical levels. POP can also serve as a planning tool for funders and nonprofit human service agencies in the Peel Region.

Background

Peel is one of the fastest growing regions in Canada, with over 1 million people. Located west of the City of Toronto, Peel is comprised of the cities of Mississauga and Brampton, and the Town of Caledon. Portraits of Peel (POP) is a project of the Social Planning Council of Peel (SPCP). It provides official statistics on the demographic, health, social, and economic aspects of the population of Peel at the regional level, the city level, and the neighbourhood level. POP has been organized into three portals: Portraits of Peel Online Database, Target Group Profiles, and Peel Statistics.

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The majority of the human service agencies are direct service agencies with limited resources for population research. However, one of their major needs is for reliable information on the population of Peel and its municipalities, in order to plan, market, and deliver services effectively and successfully to different groups within that population. The Portraits of Peel project provides them with this information. Although implemented primarily for use by the human service agencies, the Portraits of Peel project can be of value for funders of human services, bureaucrats, elected politicians, and businesses in Peel Region.

Purpose of POP

The purpose of the "Portraits of Peel" indicators project is to create a new and unique level of information within the Peel community. It highlights the SPC's experience with the development, implementation, and public policy impact of its three portals: Portraits of Peel Online Database, Target Group Profiles, and Peel Statistics.

Target Audiences

The main audiences for whom this POP has been developed are

- the nonprofit, social services sector of Peel;
- interagency collaboratives (of social service agencies);
- citizen-based community groups;
- funders of nonprofit social service agencies and community groups; and
- public policy makers in Peel, especially those responsible for the social infrastructure of Peel Region.

Although the major audience for POP is the social services sector, professionals and leaders in other sectors may also find the information useful for their own planning purposes.

Sources of Data

Data for the POP were collected from the following sources:

- Statistics Canada: Census of Canada (1996, 2001a, 2006).
- Region of Peel
- Peel Police
- Human Resources Skills Development Canada
- Health Canada
- Social Planning Council of Peel
- Other Peel Sources (e.g., community agencies in Peel)

Overview of the Portals

Portraits of Peel has three portals: Portraits of Peel Online Database, Target Group Profiles, and Peel Statistics. See Fig. 8.1

Portraits of Peel Online Database (Population Data from 1996, 2001 and 2006 Census)

The Portraits of Peel Online Database provides concise, easy-to-follow information about the population of Peel Region.[1] Official statistics on social and economic aspects of the Peel population is presented at the Regional, City, Neighbourhood, and Forward Sortation Area (FSA) levels. In addition, Portraits of Peel Online Database compares Peel to Ontario and Canada as a whole. Refer to Fig. 8.2.

The social indicators selected for this portal are based on the availability of data, importance/priority and quality of data. The primary data source for this portal is Statistics Canada: Census of Canada (1996, 2001a, 2006). Some of the indicators

Fig. 8.1   Portraits of Peel by Online Database, target group profiles, and peel statistics

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[1]Available online at http://www.portraitsofpeel.ca/pop.php

Fig. 8.2 Portraits of Peel by Online Database

are based on the entire population including institutional residents (e.g., age, marital status). Information on the other indicators contained within the report is based on a 20% sample (extrapolated to the entire population), for example: language, income, schooling, etc.

Some of the data based on the 20% sample were collected only from non-institutionalized persons aged 15 and over (e.g., income, labour force activity). *Please note that the definitions of indicators can be obtained from the 2001 Census Dictionary published by Statistics Canada at* http://www12.statcan.ca/english/census06/reference/dictionary/index.cfm.

Social Indicators Selected

(I) Demographic and Cultural Characteristics:

- Population: Size, Age, and Growth
- Immigrants
- Visible Minority Population
- Language

(II) Household and Family Characteristics:

- Marital Status

- Families
- Population Living Alone
- Home Ownership

(III) Socioeconomic Characteristics:

- Education
- Employment
- Income

Neighbourhoods and Geographic Areas Covered

Neighbourhood refers to geographic districts in the municipalities of Mississauga, Brampton, and Caledon. Fifteen neighbourhoods were identified based on postal code areas/forward sortation areas. These boundaries may not, however, represent the "natural" boundaries identified by residents, community groups, and service providers. They were chosen based on a combination of "natural" boundaries and practical limits on manipulating the available data.

Geographical Level of Data Included

- Canada
- Ontario (Province)
- City Level (Mississauga, Brampton, Caledon)
- Selected Neighbourhood Level

  1. Mississauga (nine Neighbourhoods)
  2. Brampton (four Neighbourhoods)
  3. Caledon (two Neighbourhoods)

- Selected Forward Sortation Area (FSA) Level -The first three characters of a postal code

  1. Mississauga (19 FSAs)
  2. Brampton (10 FSAs)
  3. Caledon (3 FSAs)
  4. Rural (3 FSAs)

Geographic Areas Covered

- Canada
- Ontario (Province)
- Region of Peel
- City of Mississauga (selected neighbourhoods)

  1. Clarkson/Lorne Park (L5H, L5J)
  2. Cooksville/Dixie (L4W, L4X, L4Y, L5A, L5B)
  3. Creditview (L5V)

    4. Erin Mills/Erindale (L5C, L5K, L5L)
    5. Hurontario (L4Z, L5R)
    6. Malton (L4T, L5T**)
    7. Meadowvale (L5N, L5W)
    8. Port Credit/Lakeview (L5E, L5G)
    9. Streetsville (L5M)

- City of Brampton (selected neighbourhoods)

    1. Bramalea (L6R, L6S, L6T)
    2. Central Brampton (L6V, L6W, L6X, L6Y)
    3. Gore (L6P)
    4. Heartlake (L6Z, L7A)

- Town of Caledon (selected neighbourhoods)

    1. Bolton (L7E)
    2. Caledon [Urban] (L7C)

Target Group Profiles

The target group profiles portal includes profiles on Seniors, Recent Immigrants, South Asian, Chinese, Blacks, and other communities.[2] These profiles are presented using different formats such as reports, fact sheets, and maps (see Fig. 8.3). Each fact sheet provides a summary of basic social and economic characteristics of a particular target group living in Peel (see Fig. 8.5). The data source for this portal is Statistics Canada: Census of Canada (1996, 2001a, 2006).

The majority of the newcomers served by settlement agencies and others in Peel are from visible minority groups. Under the Employment Equity Act of Canada, "visible minorities" are persons, other than Aboriginal persons, who are not White in race or colour. There are nine officially designated visible minority groups in Canada: Blacks, Chinese, South Asians, Filipinos, Latin Americans, Arabs-West Asians, South East Asians, Koreans, and Japanese. Newcomers from visible minority groups face the added barrier of racism and social exclusion or social marginalization in addition to the challenges of being a new immigrant and trying to settle and integrate into Canadian society. Therefore, settlement agencies serving visible minority newcomers have the added task of helping their visible minority clients to deal with the impact of racism on their settlement and integration process.

The Region of Peel is undergoing a real-world social experiment. This experiment involves discovering how a tremendously diverse population, made up of people from all over the world of different races and cultures and religions, can live and prosper together in harmony. Between 2001 and 2006, 118,220 new immigrants

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[2]Available Online at http://www.portraitsofpeel.ca/tgp.php

Fig. 8.3 Portraits of Peel by target group profiles

arrived in Peel Region. In 2006, 50% of the Peel population was comprised of people from visible minority groups, of which the three largest groups of visible minorities were South Asians (272,760), Blacks (95,565), and Chinese (54,285).

The rapid increase of the visible minority and newcomer population presents considerable challenges to the capability and capacity of many community service providers. Importantly, the scale of demographic change, the growing diversity, and the number of newcomers living in the Region of Peel challenge us to build inclusive and integrated communities. Support for the reception and settlement of new immigrants is essential in building an inclusive community, a community that provides opportunities for the optimal well-being and healthy development of all children, youth, and adults. All members of the community potentially gain from social inclusion – those who are vulnerable for reasons of recent immigration, poverty, racism, or fear of difference – as well as the broader community benefits when everyone is able to participate as a valued and contributing member. While inclusion provides obvious dividends to individuals and groups who are marginalized, it benefits everyone – both in terms of the vitality a society derives when all its members fully contribute and by removing the liabilities associated with exclusion.

The information products provided by this portal would create a new and unique level of information readiness within Peel with respect to the settlement and integration of newcomers to Canada. These documents would primarily be useful for community-based, nonprofit organizations in Peel's human services sector. Small nonprofit organizations often do not have the financial resources and organizational capacity to do background research for their programs and services. It is hoped that they can use these information products for the purpose of planning programs and services, marketing and outreach, the implementation of programs, and the delivery

of services. By providing information on population groups, social problems, and social issues, these easy concise and easy-to-access documents enable individual citizens, groups, and nonprofit agencies to participate in the community development and the public policy-making process in Peel.

The target group profiles portal includes profiles on Seniors, Recent Immigrants, South Asian, Chinese, Blacks, and other communities. These profiles are presented using different formats such as reports, fact sheets and maps (see Fig. 8.4). Each fact sheet provides a summary of basic social and economic characteristics of a particular target group living in Peel (see Fig. 8.5). The data source for this portal is Statistics Canada: Census of Canada (1996, 2001a, 2006).

Peel Statistics from Different Sources

The Peel Statistics portal includes data on population and dwelling counts; community profiles; cultural diversity; mobility; family characteristics; education; labour force activity; poverty and income; health, crime/victims of violence; environment; etc. See Fig. 8.6.[3] The data for this portal come from several different sources: Region of Peel, Peel Police, Statistics Canada, Human Resources Skills Development Canada, Health Canada, etc.

Themes or Trends in the Peel Population (Results from POP)

An analysis of the data from POP shows that the socioeconomic strengths and challenges in the region lie at the neighbourhood level. There are several neighbourhoods within the Region of Peel with a high proportion of their population who are at risk of, for example, poverty, loneliness, social isolation. These neighbourhoods include Malton, Port Credit/Lakeview, Cooksville/Dixie, Central Brampton and Creditview. POP also provides comparative analysis, which can be used to inform decision making about priorities for social services, community development, and neighbourhoods in Peel Region.

The analysis of the POP data has identified the following four emerging themes: growth, diversity, vulnerability, resilience, and civic capital. Using these themes the data can also be used to identify social trends, areas of risk, and areas of resilience within the population, and their implications for the human services sector. For more details on these themes and their implications refer to Fig. 8.7.

Key Lessons Learned (Outcomes and Impact of the Portals)

- SPCP, through its Portraits of Peel three portals, has created a *new and unique* level of information for the Peel community.

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[3] Available Online at http://www.portraitsofpeel.ca/peelstatistics.php
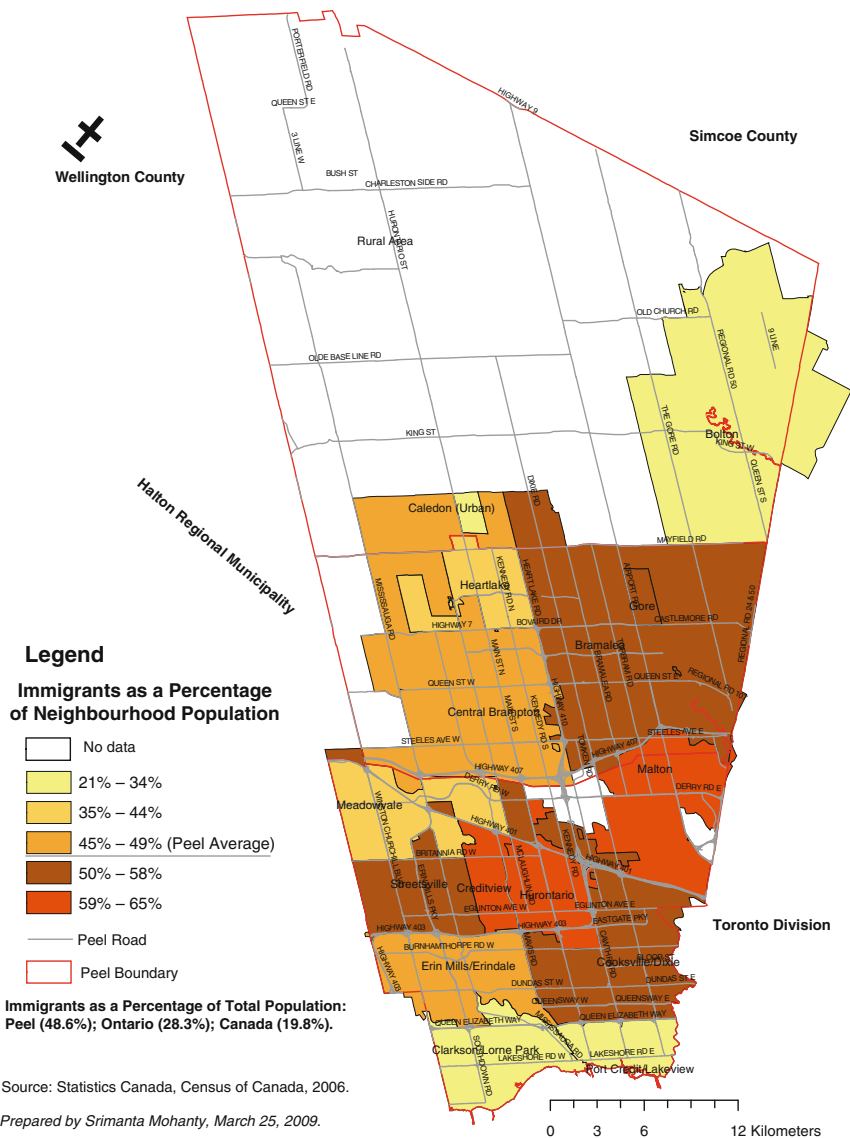
Fig. 8.4 Immigrants by Peel neighbourhoods, 2006

- The Portraits of Peel web site is a place that social service agencies and community groups can go to for *easy access* to information about the characteristics of the Peel population at different geographical levels.
- Individual citizens have easy access to *reliable statistics* on the population of Peel, the social services in Peel, and the social issues or challenges facing the people of Peel, especially the people that are vulnerable and marginalized.

THE SOUTH ASIAN POPULATION IN PEEL, 2006*

Population		
Male	138,755	50.9%
Female	133,935	49.1%
Total South Asians	272,690	100.0%

Age Groups		
0 – 4 years	24,515	9.0%
5 – 9 years	24,310	8.9%
10 – 14 years	22,255	8.2%
15 – 24 years	38,140	14.0%
25 – 44 years	93,510	34.3%
45 – 64 years	53,585	19.7%
65 + years	16,370	6.0%

Place of Birth		
Total South Asians	272,690	100.0%
Born in Canada	71,150	26.1%
Born outside Canada	201,535	73.9%

Immigrant Status & Period of Immigration		
Total South Asians	272,690	100.0%
Non-permanent residents	3,405	1.2%
Non-immigrants	71,490	26.2%
Immigrants	197,785	72.5%
Before 1961	155	0.1%
1961 to 1970	4,160	1.5%
1971 to 1980	18,355	6.7%
1981 to 1990	28,810	10.6%
1991 to 2000	81,225	29.8%
2001 to 2006	65,080	23.9%

Language (Mother Tongue) [single/multiple response]		
Total South Asians	272,690	100.0%
English	77,735	28.5%
French	675	0.2%
Non-Official Languages	194,275	71.2%

Marital Status (Persons 15 Years+)		
Total South Asians 15+	201,610	100.0%
Single	47,920	23.8%
Married	138,690	68.8%
Divorced	4,375	2.2%
Separated	3,005	1.5%
Widowed	7,615	3.8%

Home Ownership		
Total South Asians	272,690	100.0%
Owners	224,315	82.3%
Renters	48,375	17.7%

Census Family Status		
Lone parents	6,010	2.2%

Household Living Arrangements		
Persons living alone	3,010	1.1%

Education		
Total South Asians 15+	201,610	100.0%
No Certificate or Diploma	39,235	19.5%
High School Certificate	51,485	25.5%
Trades with Cert/Diploma	7,740	3.8%
Community College	21,085	10.5%
University:		
Without degree	17,360	8.6%
Bachelor's degree or higher	64,705	32.1%

Employment (Persons 15 Years+)		
Participation rate	70.0%	(# 140,890)
Unemployment rate	9.0%	(# 12,270)

Total Income 2005 (Persons 15 Years+)	
Average Income	$27,327
Median Income	$19,861

Employment Income 2005 (Persons 15 Years+)	
Average Employment Income	$29,824
Median Employment Income	$23,109

Low Income 2005	
Private Households	
Prevalence of low income **before** tax	20.7%
Prevalence of low income **after** tax	15.3%
Persons in Economic Families	
Prevalence of low income **before** tax	20.2%
Prevalence of low income **after** tax	14.7%
Unattached Individuals	
Prevalence of low income **before** tax	45.4%
Prevalence of low income **after** tax	41.3%

* All South Asian population figures are for residents in private households.
Note: Totals may not exactly equal the sum of their components due to rounding.
Source: The Social Planning Council of Peel, July 2009 (based on Statistics Canada, Census 2006, Special Custom Cross-Tabulation).

Fig. 8.5 Population characteristics of South Asians: Peel, 2006

Fig. 8.6 Peel statistics from different sources

- Social service agencies, community groups, and individual citizens have information that they can use in *a variety of ways* to provide services to their clients, advocate for better social policies, and appropriate funding for their services.
- Using credible data sources (e.g., Statistics Canada: census of Canada, Region of Peel) the Portraits of Peel project has generated and produced easy to access and use data and information, which can be used by the human services sector to be *a strong voice of advocacy* for social and economic changes in Peel. *For example, in September 2004, the Social Planning Council of Peel published Portraits of Peel: Neighbourhood Environmental Scan 1996 to 2001. This report is a comprehensive look at the formidable social and economical challenges within the Peel population. On October 26, 2004, the Social Planning Council of Peel presented the findings of portraits of Peel to the United of Peel and more than 70 social services agencies in Peel. This presentation had provided a strong voice of advocacy for social service agencies and community groups in Peel. In addition, other community-based groups (e.g., Peel Halton Development Workforce [PHDWF], Peel Poverty Action Group [PPAG], Strong Neighbourhoods Task Force) and other organizations (e.g., Peel District School Board, The Jacksonville Community Council, Florida) have referenced the SPC Peel's Portraits of Peel reports as an important and influential guide for the development of indicators to measure quality of life and community vitality. Indicators are essential in determining priorities for action measuring progress and assessing results (Jacksonville Community Council, 2009: http://communityindicators.blogspot.com/2009/10/portraits-of-peel.html)*
- In May 2005, a report, "Portraits of Peel: Facing the Facts" was produced by the collaborative effort of United way of Peel Region, the Region of Peel, the Fair Share Task Force, and the Social Planning Council of Peel. The Facing the Facts report provides a synthesis of the SPC Peel's 2001 Portraits of Peel report, with

Theme/Trend	Social Indicators	Implications for Human Services Sector
Growth	• With a population of 1.2 million, Peel was one of the fastest growing regions in Canada, in 2006. • Brampton was the fastest growing municipality in Peel between 2001 and 2006 (33.3%), followed by Caledon (12.7%) and Mississauga (9.1%). • The three neighbourhoods with highest growth rate between 2001 and 2006 were: Gore (1,396.2%), Caledon (Urban) (454.9%) and Heartlake (115.9%).	• Increased demand for social services as well as for health, housing, employment, language training and other services for the population of Peel. • Increased demand for public transportation services.
Diversity	• In 2006, immigrants comprised 58.6% of Peel's population. • Peel's immigrant population grew by 32.1% between 2001 and 2006, compared to 13.6% for Canada and 12.25 for Ontario. • In 2006, 50% of Peel's population identified themselves as a member of a visible minority group. • The three largest groups of visible minorities in Peel in 2006 were: South Asians (272,765), Blacks (95,570), and Chinese (54,290). • In 2006, 44.3% of Peel's population did not speak English or French as their first language. • Excluding English, the top three languages spoken in Peel in 2006 were: Punjabi (8%), Urdu (3.7%) and Chinese (3.6%).	• Increased demand for culturally appropriate services for the Peel population. • Increased demand for settlement services for Peel immigrants. • Increased demand for diversity management training for health and social service organizations. • Increased demand for social policies that address issues of diversity and social inclusion.
Vulnerability	• Peel has a large percentage of people living on low incomes: (14.5%); isolated seniors (15.7%, 15,520); lone-parent families (15.3%, 49,600). • The number of lone-parent families in Peel grew by 24.2% between 2001 and 2006. • Over the same period, lone-parent families grew the fastest in Brampton (39.6%). • In 2006, Malton had the highest proportion of lone-parent families (19.8%). • An increasing number of individuals and seniors are living alone in Peel, growing by 19.8% and 23.1% respectively, between 2001 and 2006.	• Increased demand for income support and employment training for the Peel population. • Increased demand for family support services in Peel communities. • Increased demand for affordable housing, affordable recreation services, dental services, etc. for the Peel population.
Resilience and Civic Capital	• 23% of the Peel population had a university degree compared to 21% in Ontario, and 18% in Canada as a whole. • In 2006, 78.1% of Peel's population was home owners, compared to 71% in Ontario and 68.4% in Canada. • The rate of growth in home ownership in Peel between 2001 and 2006 (22.1%) was significantly better than the growth rate for Ontario (13%) and Canada (11.8%). • In 2005, the average family income in Peel of $94,302 was higher than the $90,526 in Ontario and $82,325 for Canada as a whole.	• Increased demand (need) for participation in the Peel community at large, including opportunities for volunteerism and other forms of civic engagement and leadership

Fig. 8.7 Themes or trends in the Peel population (2006)

a specific and substantive focus on the human impact of the data. By putting a human face on the challenges confronting the Region of Peel, this report serves as an important public education tool. Very importantly also, this publication makes *a compelling case for more equitable investment* to strengthen the Peel community and improve the quality of life for everyone (source: United way of Peel Region, May 2005). This information is especially important for funders of the human services sector in Peel.

- Due to this project, people/citizens, and community organizations are *well informed about social issues* in Peel and are able to critically assess these issues. Individual citizens, especially those from disadvantaged groups, are able to participate in the social policy-making process in an informed manner. Community agencies are *able to plan and deliver relevant and effective social services* to individuals and families in the Peel Region, and thereby improve the quality of life for its citizens. The portals that developed from the project provide nonprofit human service agencies with a statistically reliable picture of the characteristics of the residents of Peel.

A List of the benefits as a Result of This Project

The planning and delivery of services should be based on current and factual information about diverse groups in the community. Different groups have different needs and values, and these have to be taken into consideration when delivering services to those groups. Furthermore, for citizens to make plans for their community, develop programs, and advocate for social and policy change, they must know about the state of their community (e.g., characteristics of the population, the economy, and the social infrastructure). This project provides information and analysis that settlement agencies and other service providers can use to improve their services for newcomers from visible minority groups.

Benefits to the Settlement Agency

The information, analysis, and recommendations provided by this project can be used by settlement agencies for the following purposes:

- Planning
- Marketing and outreach
- Staff training
- Recruitment of volunteers from visible minority groups
- Volunteer training
- Referrals to agencies specializing in serving newcomers from specific visible minority groups
- Opportunities for new partnerships with other service providers

Overall, the project and its deliverables serve to provide relevant and timely information, which are important for settlement agencies in developing their capacity to improve their services. This in turn will facilitate the successful settlement and integration of newcomers from visible minority groups.

This project is further valuable for settlement agencies that do not have the capacity to do their own research on visible minority newcomers, but need this information in order to plan and deliver relevant services in appropriate and effective ways.

Benefits to the Immigrant Newcomer

Immigrant newcomers from visible minority groups benefit when settlement agencies are able to deliver timely, relevant, and culturally sensitive services. This project helps to develop that capacity within settlement agencies. The results of this enhanced capacity are

- Services that are tailored and customized for visible minority newcomers
- Services that address the intersection of race and immigrant status
- Services that aim at not only settling and integrating visible minority newcomers into Canadian society, but also at facilitating equity and social inclusion for those newcomers.
- Improved opportunities and resources for settlement and integration into Canadian society.

Visible minority newcomers, community leaders, and community advocates can use the information products produced for the POP to create new services for visible minority newcomers and to advocate for the settlement, integration, and social inclusion of visible minority newcomers into Canadian society

Conclusion

The information products produced by this project can be replicated for any other part of Ontario/Canada/Worldwide. The research design, the custom tables requested from Statistics Canada, and the format of the reports can all be used by other researchers and service providers for the particular communities that they serve. The Social Planning Council of Peel is willing to work with others across Ontario to produce similar information products for settlement agencies and other service providers.

The analysis provided through this project contributes to the knowledge in the field about visible minorities in the GTA, Ontario, and Canada as a whole. Others can use this analysis in their future work on visible minority newcomers.

In an effort to empower local citizens and small organizations to deal with social justice issues and the development of social programs, the Social Planning Council of Peel has invested heavily in developing its web sites to be a useful research and education resource for nonprofit social service agencies and community groups in Peel.

During the past 10 years, the SPC has focused on providing easy-to-use fact sheets and maps on vulnerable groups and social issues in Peel. All of the information on the SPC's web site is available free of charge to the public. Furthermore, individual citizens have easy access to reliable statistics on the population of Peel, the social services in Peel, and the social issues or challenges facing the people of Peel, especially those that are vulnerable and marginalized.

The Portraits of Peel community indicators project improves the capacity and effectiveness of the social service infrastructure of Peel. The community agencies in Peel have access to good data on the Peel population, social policies, and services of relevance to their clients.

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Chapter 9
The Development of Quality-of-Life Indicators in Rural Areas in Iran: Case Study – Khaveh Shomali District, Lorestan Province

Mohammad Reza Rezvani and Hossain Mansourian

Abstract Quality of life (QOL) is a complex and multidimensional concept relevant to community conditions in a specific geographic region, and it is traditionally captured using both objective and subjective indicators. QOL indicators are typically used to monitor and evaluate community development in relation to the social, health, environmental, and economic aspects in a community. The goal of this case study is to illustrate the measurement of QOL in the rural district of *Khaveh Shomali* (Iran) using two different approaches: objective and subjective indicators. The data were gathered through survey of a random sample of 210 heads of the households in the Khaveh Shomali district. The results indicate that QOL is "poor" in about 34% of the households, "moderate" in more than 45%, and "good" in 21%. We conclude by recommending that effective planning and management by the government with the participation of community leaders are necessary to improve QOL.

Introduction

In recent decades, the identification, assessment, and enhancement of quality of life (QOL) have become major goals of community researchers, planners, and government officials. Many scientists in disciplines such as psychology, medicine, economics, environmental sciences, sociology, and geography have incorporated the concept of QOL in their own disciplinary studies. Nevertheless, there is no comprehensive and established definition of QOL. Perhaps this may be due to the fact that QOL is influenced by major elements such as time and place, as well as individual and social values.

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QOL research of a community can be viewed as description and evaluation of the nature or conditions of life in a certain country or region (Rezvani, 2004). Life quality is determined by exogenous forces, with respect to an individual or a social group, forces like production technology, infrastructure, relations with other groups or countries, various institutions in society, the natural environment, as well as endogenous factors that reflect the interaction between personal values and cultural values (Das, 2008). QOL also refers to the conditions of the environment in which people live (air and water pollution, or poor housing, for example) and attributes of people (such as health or educational achievement) (Pacione, 2003).

In sum, QOL represents how well human needs are met and the extent to which individuals or groups perceive satisfaction or dissatisfaction in various life domains (Costanza, Fisher, Ali, Beer, Bond, & Boumans, 2007). Therefore we defined QOL as a multidimensional construct that includes the objective conditions of life and subjective well-being. The objective aspect captures the reality of life, while the subjective aspect captures perceptions and evaluations of people about their lives.

The goal of this case study is to report on a case in which we measured the QOL of rural households in *Khaveh Shomali* district using objective and subjective indicators of QOL. The results should assist policy makers in evaluating the effectiveness of current policies and programs and to plan new ones.

The *Khaveh Shomali* District is located in Lorestan Province in west of Iran. Its distance from the nearest urban center is 13 km. This area has a population of 8,164 people and 18 villages according to the 2006 Census. A random sample of about 210 heads of household were selected from nine villages named *Sarab Ghazanfar*, *Shotor Kheft*, *Iranshahi*, *Kafraj*, *Sorkhanjoob Olya*, *Zelivar*, *Gavbazeh*, *Zamaneh*, and *Sorkhanjoob Sofla*. The target area involves rural communities that have the same religion, culture, and values. They are all Muslims and speak the *Laki* language that has roots in ancient Iranian languages. The economy is based on agriculture. The villages are settled on a relatively smooth plain, and the rural landscape in this area can best be described as a combination of dry farming, aqua culture (wetland farming) in river streams, lowland hills, and pastures.

A Framework for QOL Assessment

A framework is a structure or tool that is used to provide logical support or order to a group of ideas. The creation of a QOL framework includes the development of a structure of categories to sort out and organize QOL issues. This is followed by the generation and selection of the QOL issues in a community context. The selection of QOL indicators to measure selected QOL issues is the last stage. Indicators are signs or signals of complex events and systems. Indicators are used to simplify information about complex phenomena, such as QOL, in order to make communication easier and quantification possible (Hardi and Pinter, 2006).

Selection of Categories, Life Domains, and Indicators

Many studies have captured QOL in terms of satisfaction in various life domains and aggregating these domains into an overall index. Of course the challenge here is to identify the exact life domains, weigh them, and aggregate them to generate the overall QOL index. There is no one definitive method to determine the number of life domains and indicators within each domain (Kharazmi, 2004). Community indicator researchers have used personal judgment and data availability in making these decisions.

In our case, we selected life domains and indicators guided by a list of human needs based on the studies of Maslow's (1954) hierarchy of needs, Costanza et al.'s (2007) QOL approach, Pal and Kumar (2005) QOL concept of rural community, Clarke, Islam, and Paech (2006) measure of QOL using hierarchical needs, Max-Neef's (1992) matrix of human needs, and the needs-analysis approach of Rafeepour (1985).

In *Motivation and Personality*, Maslow (1954) presents his theory of hierarchical needs and human development. Fundamental to Maslow's theory of motivation is that human needs are hierarchical – that unfulfilled lower needs dominate one's thinking, actions, and being until they are satisfied. Once a lower need is fulfilled, a next-level need surfaces to be addressed or expressed in everyday life. Once all of the basic or deficiency needs – so called because their absence is highly motivating – are satisfied, then the person tends to higher needs such as the need for self-actualization. Indeed, the fulfillment of the basic needs is considered a prerequisite to such pursuit. Briefly, the first level of needs is physiological (e.g., the need for food, air, and water). The second level encompasses safety needs. These include security, stability, protection, freedom from fear, anxiety, and chaos. The third level of needs is belonging and love. These needs involve the giving and receiving of affection. When such needs are unmet, the person feels keenly the absence of friends, mate, and/or children. The fourth level of needs is essentially the need for esteem, which is typically met by mastery of the environment and the prestige that comes from social recognition. The fifth level, the need for self-actualization, entails maximizing one's unique potential in life. Living at this level can lead to peak experiences and even transcendence – the experience of deep connection with others, nature, or God, and the perception of beauty, truth, goodness, and the sacred. Such experiences lead to feelings of being alive and enlightened.

Costanza et al. (2007) present an integrative definition of QOL that combines measures of human needs with subjective well-being or happiness. QOL is proposed as a multiscale, multidimensional concept that contains interacting objective and subjective elements. They relate QOL to the opportunities that are provided to meet human needs in the forms of built, human, social, and natural capital (in addition to time) and the policy options that are available to enhance these opportunities. The ability of humans to satisfy their basic needs come from the opportunities available and constructed from social, built, human, and natural capital (and time). Policy and culture help to allocate the four types of capital as a means for providing these opportunities. For example, built capital is a primary satisfier of the need for

subsistence (via, for example, shelter), but natural capital is also a primary satisfier of subsistence (via, for example, clean air and water), and human and social capital are also important (via, for example, healthcare).

A new approach to well-being measurement is presented in the paper of Clarke et al. (2006) based on multidimensional hierarchical human needs and motivation. This hierarchical approach is based on a psychological theory of human motivation. This approach does not seek to use the Maslow approach to predict patterns of economic development. Rather, it draws on Maslow's description of needs to measure well-being. In their study, hierarchical human needs are classified into five categories. Eight indicators were selected to reflect these categories. Two measures have been chosen as indicators for first level of need; calories per person and access to healthy water. Having attained the lowest level of needs required, attention would focus on achieving a feeling of health. Two indicators of health have been chosen to measure this: infant mortality and life expectancy. Belonging to the wider society is represented by telephone mainline connections and fertility rates. Adult illiteracy rates among adults and unemployment rates have been selected to represent the concept of self-esteem.

Pal et al. (2005) have employed a structural approach to describe QOL. They classified human needs in four categories (including basic life needs, well-being needs, opportunity needs, and amenity needs) and by composite of the objective and subjective indicators achieved to a combined index of QOL. Basic life needs category includes housing, drinking water, light, fuel for cooking, sanitation, drainage and sewerage, garbage disposal, food and nutrition and other important facilities such as daily market. Well-being category includes employment, livestock owned, ownership of durable goods, ownership of land, and health and safety. Opportunity needs category includes educational status, transportation facilities, information, and communication and finally the amenity needs category includes recreation, environmental quality, and cultural opportunities.

Guided by the preceding theoretical, we developed our own theoretical framework of human needs and corresponding indicators. Human needs are classified into three basic categories: basic needs, well-being needs, and opportunity and leisure needs. Within each need category we specified applicable life domains and selected corresponding indicators. Table 9.1 shows the categories, domains, and indicators of QOL in rural communities.

Weighting the Selected Categories and Domains

The second stage involved weighting the selected categories and domains. Different needs vary in their degree of pre-potency. That is, certain needs are more basic than others, therefore are likely to influence overall QOL more strongly than the less basic needs. Weighting needs was accomplished through ratings by experts. One can argue that the ratings of importance can best be accomplished by citizens. We used experts because most citizens (residents) in rural areas have low education, and therefore are not in a position to be literate enough to fully understand let alone appreciate the task at hand. The experts included academic researchers and local officials.

Table 9.1   Framework and parameters for QOL assessment in rural communities

Category	Domain	Indicators
Basic life needs	Housing	Type and size of house House amenities (bathroom, kitchen, toilet) satisfaction of status of house and facilities
	Drinking water	Source of supply water water cleanliness water quantity satisfaction of status of drinking water
	Light	Source of light satisfaction of status of light
	Fuel for cooking/heat	Type of fuel availability of fuel satisfaction of status of access to fuel
	Food and nutrition	Weekly consumption of meat, fruits, and vegetables satisfaction of status of nutrition
	Sewage and garbage disposal	Sewage and garbage disposal facilities satisfaction of status of sewage and garbage disposal facilities
Well-being needs	Health	Access to medical facilities distance to nearest medical facility satisfaction of status of health facilities
	Safety	Distance to nearest police station satisfaction of status of safety
	Employment	Type of job, monthly income, income security for 45 days at least satisfaction of employment opportunities
	Ownership of material goods (land, goods, livestock)	Type and quantity of land type and quantity of livestock type of goods satisfaction of status of ownership of land/livestock owned/goods
Opportunity and leisure needs	Educational status	Access to educational facilities satisfaction of status of educational facility
	Information and communication	Condition of roads access to public transport public library facility post office facility P&T facility computer and internet facility satisfaction of status of information and communication facilities
	Participation	Membership in social institutions contribution to and having some control over political, community, and personal life social involvement sense of belonging satisfaction of status of participation

Table 9.1 (continued)

Category	Domain	Indicators
	Freedom	Having certain guarantees of non-interference with certain choices that are especially personal and definitive of selfhood such as choices regarding marriage, childbearing, employment satisfaction of status of freedom
	Recreation and leisure	Travel access to leisure facilities access to cultural facilities access to sports facilities satisfaction of status of recreational facilities

Assigning Scores to Indicators

In our case, we defined QOL in terms of satisfying human needs and residents' satisfaction of available services and conditions in the local area. Therefore giving scores to every domain was accomplished by combining the objective and subjective indicators. The important point at this stage is how to quantify the objective and subjective indicators. To quantify the subjective variables of QOL, satisfaction with community facilities and conditions was measured using rating scales varying from "extreme satisfaction" to "extreme dissatisfaction." The indicators we used to evaluate the subjective dimension of QOL are shown in Table 9.2.

With respect to the objective indicators, we used two methods. First we used the Geographical Information System (GIS) to prepare the map and measure the distance between households and selected services (health centers, schools, etc.,). Based on the spatial analysis, households were scored in relation to different services and facilities based on geographic distance to these services and facilities. The objective indicators involving the use of GIS and their scoring are shown in Table 9.3.

To quantify the other objective variables we used experts' opinions. For example, in relation to type of fuel for cooking/heat used by rural households, the most and the least score was allocated to gas and coal respectively. See Table 9.4.

Developing a QOL Composite Index

The fourth stage involved combining different domains to develop an overall QOL index. In this stage, different domains were combined by a cumulative linear mathematical equation shown below. The equation shows that a QOL index is a function of summing QOL domain scores in the three major categories: basic needs, well-being needs, and opportunity and leisure needs. Within each category, each domain

Table 9.2 Subjective indicators used for assessing subjective well-being

Category	Indicator
Basic life needs	Satisfaction of status of house and facilities
	Satisfaction of status of drinking water
	Satisfaction of status of light
	Satisfaction of status of access to fuel
	Satisfaction of status of nutrition
	Satisfaction of status of sewage and garbage disposal
Well-being needs	Satisfaction of status of health facilities
	Satisfaction of status of safety
	Satisfaction of employment opportunities
	Satisfaction of status of ownership (land, livestock owned, goods)
Opportunity and leisure needs	Satisfaction of status of educational facility
	Satisfaction of status of information and communication facilities
	Satisfaction of status of public transportation facilities
	Satisfaction of status of participation
	Satisfaction of status of freedom
	Satisfaction of status of recreational facilities

Table 9.3 Objective indicators assessed by GIS

Parameters	Buffers
Distance to nearest fuel station	0–2 km, 2.01–4 km, 4.01–6 km, 6.01–8 km, + 8 km
Distance to nearest medical facility	0–3 km, 3.01–5 km, 5.01–7 km, 7.01–9 km, + 9 km
Distance to nearest police station	0–3 km, 3.01–5 km, 5.01–7 km, 7.01–9 km, + 9 km
Distance to nearest guidance schools	0–3 km, 3.01–5 km, 5.01–7 km, 7.01–9 km, + 9 km
Distance to nearest high school	0–5 km, 5.01–8 km, 8.01–10 km, 10.01–12 km, + 12 km
Distance to nearest post office	0–3 km, 3.01–5 km, 5.01–7 km, 7.01–9 km, + 9 km
Distance to nearest telephone booth	0–3 km, 3.01–5 km, 5.01–7 km, 7.01–9 km, + 9 km
Distance to nearest sport center	0–3 km, 3.01–5 km, 5.01–7 km, 7.01–9 km, + 9 km
Distance to nearest cultural center	0–3 km, 3.01–5 km, 5.01–7 km, 7.01–9 km, + 9 km

is weighted and the sum of the weighted scores captures the overall score of that category. The weighted summative scores of the three categories are then summed (but also differentially weighted). See equation below.

Table 9.4 The objective indicators assessed by expert opinions

Parameters	Desirable status
Housing	House with kitchen, bathroom, and toilet: 100 m² area
Drinking water	Clean water with individual pipe-laying
Light	Electricity
Fuel for cooking/heat	Gas; located in a buffer zone of 3 km from a fuel station
Sewage and garbage disposal	Availability of sewage and garbage disposal facilities
Food and nutrition	Three meals with combination of four categories of food that constitute a nutritious meal
Health	Located in a buffer zone of 3 km from a medical center
Safety	Located in a buffer zone of 3 km from a police station
Employment	A monthly income of $400 or more (2009)
Ownership of material goods (land, durable goods, livestock)	To have 3 hectare aquaculture land or 5 hectare dry land to have 5 weight gain livestock or 10 small livestock to have refrigerator, TV, stove, vacuum cleaner, sewing machine
Educational status	To have completed secondary school located in a buffer zone of 3 km from a primary school located in a buffer zone of 5 km from a secondary school
Information and communication	Located in a buffer zone of 3 km from a post office located in a buffer zone of 3 km from a telecommunication center asphalted road with public transportation facilities
Participation	Maximum participation in rural council elections
Freedom	To have maximum freedom to make decisions about important life events
Recreation and leisure	Located in a buffer zone of 3 km from a sport complex located in a buffer zone of 3 km from an art/cultural center

$$\text{RQOL Index} = \left[\left\{ \sum_{i=1}^{4} \alpha_i \, (\text{DWB}n)_i \right\} \times \beta \right] + \left[\left\{ \sum_{i=1}^{5} \alpha_i \, (\text{DO}n)_i \right\} \times \beta \right]$$

where, RQOL = Rural QOL Index
α_i = Weight of Domain i
β = Weight of Category
$(\text{DB}n)_i$ = Rating of ith Domain of Basic Needs
$(\text{DWB}n)_i$ = Rating of ith Domain of Well-being Needs
$(\text{DO}n)_i$ = Rating of ith Domain of Opportunities and Leisure Needs

For further information about how the QOL index see an illustration provided in Appendix 1.

The final score based on the RQOL index was then interpreted as "poor," "fair," "moderate," "good," or "very good" based on the score ranges shown in Table 9.5

Table 9.5 Interpreting the RQOL index scores

RQOL index	QOL meaning
<0.2	Poor
0.20–0.40	Fair
0.40–0.60	Moderate
0.60–0.80	Good
0.8–1.00	Very good

Research Tools

A survey questionnaire developed by the researcher was used to gather data. The questionnaire included questions about population characteristics and the objective and subjective aspects of QOL. In relation to the objective aspects of QOL, accessibility of households to facilities and opportunities to meet their needs was assessed. In relation to the subjective aspects of QOL, the survey items focused on whether the needs of household members were met.

Content validity was used to assess the validity of the measures. The first step was the use of experts to judge the extent to which these QOL measures capture the intended constructs The experts were 12 individuals (including the academic researchers who conducted this study) in fields of study of geography, sociology, economics, and psychology. The survey questionnaire was pretested using a sample of 30 households. The statistical sample involved in the pretest was selected from Kafraj village as a random sampling technique. The final questionnaire was slightly modified as a function of that pretest.

The research sample comprised of heads of rural households, residents of the north *Khaveh* District. A random sample of 210 households was selected from nine villages, namely *Sarab Ghazanfar*, *Shotor Kheft*, *Iranshahi, Kafraj*, *Sorkhanjoob Olya*, *Zelivar*, *Gavbazeh*, *Zamaneh*, and *Sorkhanjoob Sofla*. We used a two-stage sampling technique to select the samples. The first stage involved the selection of nine villages from a total of 18 villages located in this area. This was done by stratified sampling based on population size, distance from city, and topography. In the second stage we selected sample households at random. Some of the questionnaires were completed by authors using face-to–face contact with household headman separately, because some of them didn't have the sufficient education to complete their questionnaire. We used a different method for households: a "headman" with secondary school education was employed to deliver the questionnaire to selected households; the questionnaire was then completed by the head of household, the "headman" collected the completed questionnaire the next day. Out of 220 questionnaires distributed totally we received 140 completed questionnaires, generating a response rate of 64%.

Data Analysis

With respect to data analysis, we first used the Arc GIS Software to produce data in relation to the objective variables, namely distance of households from services and

facilities. These observations were combined with the responses from the survey questionnaires and were inserted into a data file in the SPSS Software. We then conducted descriptive statistics (frequencies tabulation) to describe the variables under study and used GIS methods to display QOL indicators.

Results

In this section we first describe the socioeconomic status of villages and rural households. Then we describe the data related to the QOL indicators.

Socioeconomic Status

Based on the survey data involving the sample of 210 households (selected from nine villages), the socioeconomic status of the area can be described as follows:

Population Demographics

- The average population growth in the target area in 1996–2006 has been −0.78%.
- The family planning programs carried out in the area have had no significant effect on the area; for instance the family size of (4.43) is higher than the average national level (4.03).
- About 67.2% of the whole population of the area falls in the age range of 15–64 years.

Literacy Status

- The average literacy level (73.76%) is much lower than the average national level (84.6%); on the other hand, the majority of the educated people (over 50%) have only completed their primary school level.
- The ratio of educated men to educated women is 79.7.3:67.3% respectively.

Immigration Status

- Many people immigrated from villages to cities such as *Noorabad*, *Nahavand*, and *Khorramabad* in 1996–2006, which may be the main cause for the negative growth in the population of this area.
- Daily Market and Shopping Facilities
- Most villages in the area have easy access to daily markets to provide for their basic needs.
- Most economic interactions in these villages are with *Noorabad* city as the county center.

Occupation Status and Income Pattern

- The overall employment pattern of the area shows that more than half of the population is engaged in agriculture.
- Some 17.04% of the active population of the area is unemployed.
- Only about 7% of the employees in the area are engaged in government positions.
- Some 17% of the employed population has unsteady daily jobs.
- More than 90% of the workforce comprises men.
- Some 78% of the families have a monthly income of less than 2.000.000 Rials (200 USD)

Food Costs

- Over 50% of the families spend half of their monthly income and around 25% of the families spend 80% of it on food costs.

Land Ownership

- The agricultural system in this area is as small land ownership, and the land for each household is highly fragmented, which limits investments in agricultural activities.

Roads

- Over 90% of the roads in the target area are paved and the remaining 10% are graveled roads.
- Most of the villages in the area do not have easy access to public transportation. Some of population indicators of Khaveh Shomali District are shown in Table 9.6.

Table 9.6 Selected population indicators in the study area (1996–2006)

Year variable	1996	2006
Population	8,841	8,164
Population 0–14 years	4,221	2,347
Population 15–64 years	4,359	5,486
Population + 65 years	261	331
Household	1,501	1,841
Household size	5.89	4.43
Sex ratio	94.6	93.54
Male literacy rate	73.31	79.67
Female literacy rate	56.51	67.31
Working population	67.77	83.95
Male employed	45.9	39.61
Female employed	1.57	3.76

QOL Indicators and Overall Index

We then used the QOL index to rate the QOL of households in the area. The QOL index can be used as a powerful tool for community planning to monitor key indicators that reflect the social, health, environmental, and economic dimensions of the community (Pal et al. (2005)).

The results show that QOL is *poor* in about 34% of the households, *moderate* in more than 45% of them, and *good* in 21% of the households. The maximum percentage for good QOL (40%) belongs to *Sarab Ghazanfar* village, and the minimum (3.3%) belongs to *Sarkhanjoob-e-Sofla* village. The results are shown in Table 9.7. Generally, the QOL in this area is poor, thus effective planning and management by the government with the participation of community leaders is necessary to improve QOL.

Primary Needs

The study results indicate that more than half of the rural houses in this area are vulnerable to natural hazards. Satisfaction with the quality of houses is low: over 72% of respondents expressed dissatisfaction. The maximum satisfaction level, a percentage of less than 50, belongs to *Sarabe-e-Ghazanfar* village.

Most of the villages of the area have access to drinking water, but because of the low population in the villages and lack of attention by local authorities, only two villages have water filtration systems. Nevertheless due to unhealthy water in most of the villages and cut-off water particularly in summertime, about 50% of people reported that they are not satisfied with the water situation. The maximum satisfaction with this service is 70% and belongs to Sarabe-e-Ghazanfar village; the minimum of about 10% belongs to *Iranshahi* village.

All of the villages have electricity, but because of the frequent switch-offs due to natural hazards such as storms and the long time it takes to switch the power back on, their satisfaction with this service is about 30%. The survey results also indicate that area residents are not knowledgeable about nutrition. The average consumption of nutrition categories show that most people in the area consume two food categories of bread and cereals, sugar and fat mainly, fruits and vegetables. Meat, eggs, and grains are consumed far less. Nevertheless because of low income and their inability to buy nutritious food, about 40% reported not being satisfied with their food consumption. The highest satisfaction level reported in relation to food and nutrition is 65%, belonging to the *Zamaneh Noormohammadi* village.

The source of energy used in the area is oil and natural gas, but because of the lack of stock at fuel stations and the problems with provisioning particularly in cold seasons, only less than 5% reported satisfied with this service. The maximum satisfaction level is 20% belonging to the *Sarabe-e-Ghazanfar* village.

The sewage and waste discharge system in the area is also very poor. Therefore there is a garbage problem and sewage stream in most villages. Satisfaction with this service is reported at less than 5%.

Table 9.7 Quality of life in the villages of the study area (household %)

Villages										Quality of life of households
Khaveh Shomali district	Sorkhanjoob Sofla	Zamaneh	Gavbazeh	Zalivar	Sorkhanjoob Olya	Shotor Kheft	Kafraj	Iranshahi	Sarab Ghazanfar	
13.4	20	20	22.7	15	3.3	6.7	10	3.3	10	Poor/fair
20.3	40	30	27.3	20	6.7	13.3	10	5	30	moderate
45.2	36.7	30	40	50	55	53.3	50	51.7	40	very good
21.1	3.3	20	10	15	35	26.7	30	40	10	good
0	0	0	0	0	0	0	0	0	0	
100	100	100	100	100	100	100	100	100	100	Total

Table 9.8 Frequency statistics of basic needs satisfaction (%)

Category domain	Very dissatisfied	Dissatisfied	neutral	Satisfied	Very satisfied	Mean value	Standard deviation
House and facilities	44.3	28.1	16.2	5.7	5.7	2.00	1.164
Drinking water	24.8	25.2	25.7	19.5	4.8	2.54	1.194
Light	18.1	17.1	36.2	23.8	4.8	2.80	1.136
Access to fuel	33.8	30.0	32.4	3.8	0.0	2.06	0.902
Nutrition	21.9	19.0	36.7	18.6	3.8	2.63	1.130
Sewage and waste discharge facilities	86.2	8.1	4.8	0	1.0	1.21	0.616

Well-Being Needs

Due to inadequate investment in agriculture, which forms the base of the economy of the area, around 17% of the active population is unemployed. Satisfaction with employment opportunities is reported to be less than 5%.

There are three clinics, six health centers, and two drugstores in the area, and only two villages have access to physicians. Satisfaction with the health status is reported as 45%; its maximum of less than 70% belongs to the *Gavbazeh* village.

Over 80% of households are satisfied with their security. The maximum dissatisfaction with security is over 30%, which belongs to the *Sarab Ghazanfar* village.

Satisfaction with land ownership, livestock, and durable goods is 11, 16 and 36%, respectively. The maximum satisfaction with land ownership is reported by households in the *Sarab Ghazanfar* village, with livestock in *Sarkhanjoob-e-Sofla*, and with durable goods in *Zamane Noormohammadi*.

Opportunity and Leisure Needs

All of the villages of the area have primary schools, but there are primary schools in only four villages and secondary schools in only three. However in spite of having primary schools, because of the weakness of the infrastructure and welfare facilities in schools, satisfaction with educational facilities is reported at less than 20%, the highest level of which belongs to the *Sarab Ghazanfar* village. Furthermore, the literacy ratio for males is a little less than 80% and about 67% for females.

The results also show that 80% of the respondents are not satisfied with transportation. Most of roads in this area are paved, but the deficient nature of public transportation facilities seems to be the main cause for the dissatisfaction.

Table 9.9 Frequency statistics of well-being needs satisfaction (%)

Category domain	Very dissatisfied	Dissatisfied	neutral	Satisfied	Very satisfied	Mean value	Standard deviation
Employment opportunities	77.6	12.8	6.7	3.0	0.0	1.30	0.634
Health facilities	9.5	16.2	29.0	32.9	12.4	3.22	1.150
Safety	2.9	7.7	8.1	40.5	40.8	4.09	1.099
Ownership of land	26.2	27.1	35.2	9.5	1.9	2.34	1.028
Ownership of livestock	36.2	21.0	26.7	14.3	1.9	2.25	1.147
Ownership of goods	10.5	14.3	38.6	31.0	5.7	3.07	1.049

Table 9.10 Frequency statistics of opportunity need satisfaction (%)

Category domain	Very dissatisfied	Dissatisfied	neutral	Satisfied	Very satisfied	Mean value	Standard deviation
Educational facilities	40.5	24.8	14.8	13.3	6.6	1.87	0.939
Public transportation facilities	53.3	28.1	16.7	1.0	1.0	1.68	0.852
Information and communication facilities	11.9	33.3	41.4	11.9	1.4	2.58	0.900
Political participation	5.7	17.6	37.1	26.7	12.9	3.23	1.066
Freedom	1.9	10.5	20.5	34.3	32.9	3.86	1.053
Recreational facilities	58.6	20.0	16.7	4.8	0.0	1.68	0.918

The infrastructures of information and communication technology (ICT) in this area are poor. There is, for instance, only one post office and only six telecommunication centers in the region. Furthermore, only one village has access to the Internet and newspapers. In general about 45% of the rural inhabitants are not satisfied with the information and communication infrastructures in their villages.

Participation in the two recent elections was very high, about 90%. This may be explained by problems related to differences in religious beliefs, national and tribal fanaticism, and security.

Moreover, more than 67% of the respondents reported being satisfied with having choices in personal choices such as marriage and career. The recreational, sport, and cultural amenities are poor and nearly 80% of the respondents reported being not satisfied.

Table 9.11 The level of hope to reach ideal QOL in the study area

Categories	Not hopeful	Somewhat hopeful	Very hopeful	Total
Frequency (%)	7	53	45	100

Table 9.12 Correlation coefficients between expectations of QOL improvement and age and education

Variables	Expectation of QOL improvement
Age	−0.294[a]
Education	0.218[a]

[a]Correlation is significant at the 0.01 level

Expectations Regarding Improvement of QOL

To gauge the level of expectation of rural households regarding improvement of their QOL, the survey asked, "if your QOL is less than what you expect, how much are you hopeful to reach your ideal QOL?" Less than 7% answered that they had no hope for improvement. About 53% were moderately and 40% were very hopeful for future improvement in their QOL (see Table 9.11).

The results of correlation analysis between expectations of improvement in QOL and age and literacy indicate that expectations decrease with increases in age and increases with the improvement in education (see Table 9.12).

Life Satisfaction

Life satisfaction was captured in the survey by asking respondents how they evaluate their life as a whole. Responses to this survey item represent a broad, reflective appraisal the person makes of his or her life (Diener, 2006). Specifically, respondents were asked how satisfied they were with their lives during the last year. A five-point rating scale (1 = very dissatisfied, 5 = very satisfied) was used. The average responses are shown in Table 9.13. In general, satisfaction with life in the target area is less than 30%: percentage of "very satisfied" and "satisfied" are 4.2

Table 9.13 Life satisfaction in the study area

Category	Life satisfaction (%)
Very dissatisfied	5.5
Dissatisfied	29.2
Neutral	36.1
Satisfied	25
Very satisfied	4.2
Total	100

and 25, respectively. Percentage of respondents who are "neutral" about their life is 36%. Respondents who are "dissatisfied" and "very dissatisfied" with life are 25 and 4.2%, respectively.

Conclusion

Measuring the QOL of a rural population is dependent on both subjective and objective indicators. Such measures can be used as a tool to monitor community development of rural communities. These measures reflect the well-being of the community in terms of various social, economic, health, and environmental aspects. As such, authorities can use these measures to evaluate the effectiveness of development plans and policies.

Therefore, we can say that QOL is a relative concept: its indicators vary in time and place. To assess the QOL in rural areas, we need indicators that match the conditions of life in these areas. Furthermore, people have expectations about their QOL that should be incorporated in the assessment of QOL. Expectations about how living conditions are likely to improve can be informative in guiding development efforts.

In general, the indicators of QOL in *North Khave District* show that QOL is poor in the area; therefore, it is necessary that the government intervenes to improve the QOL of this region, in particular.

Our case study indicates that prior development efforts have not paid enough attention to the economic and social issues of rural communities. We recommend not only that authorities should address the economic and social problems of rural communities in Iran but also that these efforts should be done in integrated and sustained ways. Development efforts to improve QOL in such areas should be participatory and guided by QOL indicators that capture subjective and objective needs of targeted populations. To achieve this goal, we recommend the following actions:

- Focus mainly on industrial and semi-industrial agricultural and animal breeding activities and make use of available cottage-industry technologies to create job opportunities.
- Develop transportation and communication networks to support planned activities. Encourage and inform local people to develop the necessary rural information and communication infrastructures (RICT).
- Provide financial support to poor localities and encourage participation of the private sector in civic affairs.
- Conduct an inventory of the available material and human resources in the area and ways these resources can be utilized best. Prepare a plan with action timeline to introduce programs designed to improve QOL and monitor the effectiveness of these program through QOL subjective and objective indicators.

Appendix 1: An Illustration of How Survey Scores for One Respondent (Household) Were Used to Derive a QOL Index Score

Category and weight of category (β)	Domain and weight of domain (α)	Indicators and score of each indicators	Score of domain	RQOL (domain*α* β)
Basic needs (0.39)	Drinking Water (0.15) . . .	Source of water (3) Satisfaction of status of drinking water (2)	2.5	0.15
Well-being needs (0.33)	Health (0.24) . . .	Access to medical facilities (4) Satisfaction of status of health facilities (3)	3.5	0.28
Opportunity and leisure needs (0.28)	Education (0.19) . . .	Access to educational facilities (5) Satisfaction of status of educational facilities (4)	4.5	0.24
Total	–	–	–	0.67

Appendix 2: Variable Coding Examples

Domain	Indicators	Codes
Housing	Housing Amenities (bathroom, kitchen, toilet)	Bathroom, kitchen, toilet (5), two amenities (3), one amenity (1)
	Satisfaction with status of house and facilities	Very satisfied (5), Satisfied (4), neutral (3), dissatisfied (2), very dissatisfied (1)
Drinking water	Source of water supply	Clean water with individual pipe-laying (5), clean water with public pipe-laying (3), well (1)
	Satisfaction of status of drinking water	Very satisfied (5),…, very dissatisfied (1)
Light	Source of light	Electricity (5), Gas (3), Oil (1)
	Satisfaction of status of light	Very satisfied (5),…, very dissatisfied (1)
Fuel for cooking/heat	Type of fuel	Gas (5), Oil (3), Coal (1)
	Availability of fuel	0–2 km (5), 2.01–4 km (4), 4.01–6 km (3), 6.01–8 km (2), + 8 km (1)
	Satisfaction of status of access to fuel	Very satisfied (5),…, very dissatisfied (1)
Food and nutrition	Weekly consumption of meat, fruits, and vegetables	Five times in week (5), four times in week (4),…, once a week (1)
	Satisfaction of status of nutrition	Very satisfied (5),…, very dissatisfied (1)
Sewage and garbage disposal	Sewage and garbage disposal facility	Exists (5), does not exist (1)
	Satisfaction of status of sewage and garbage disposal facilities	very satisfied (5),…, very dissatisfied (1)
Health	Distance to nearest medical facility	0–3 km (5), 3.01–5 km (4), 5.01–7 km (3), 7.01–9 km (2), + 9 km (1)
	Satisfaction of status of medical facilities	Very satisfied (5),…, very dissatisfied (1)
Safety	Distance to nearest police station	0–3 km (5), 3.01–5 km (4), 5.01–7 km (3), 7.01–9 km (2), + 9 km (1)
	Satisfaction of status of safety	Very satisfied (5),…, very dissatisfied (1)
Employment	Monthly income	+400$ (5), 400–300$ (4), 300–200$ (3), 200–100$ (2), 100$ and less (1)
	Satisfaction of employment opportunities	Very satisfied (5),…, very dissatisfied (1)
Ownership of material goods (land, goods, livestock)	Type and quantity of land	Aquaculture land: 5 hectare (5),…, 1 hectare (1) Dry land: 3 hectare (5), 2 hectare (3), 1 hectare (1)
	Type and quantity of livestock	10 small livestock (5), 8 small livestock (4), 6 small livestock (3), 4 small livestock (2), 2 small livestock (1)
	Type of goods	5 weight gain livestock (5),…, 1 weight gain livestock (1)
	Satisfaction of status of ownership of land/livestock owned/goods	Refrigerator, TV, stove, vacuum cleaner, sewing machine (5), 4 durable goods (4), 3 durable goods (3), 2 durable goods (2), 1 durable good (1) Very satisfied (5),…, very dissatisfied (1)

Appendix 2: (continued)

Domain	Indicators	Codes
Educational status	Access to educational facilities	Primary schools: 0–3 km (5), 3.01–5 km (4), 5.01–7 km (3), 7.01–9 km (2), + 9 km (1) Secondary schools: 0–5 km (5), 5.01–8 km (4), 8.01–10 km (3), 10.01–12 km (2), + 12 km (1)
	Satisfaction of status of educational facilities	Very satisfied (5),…, very dissatisfied (1)
Information and communication	Condition of roads	Asphalted Road (5), graveled road (3), mud road (1)
	Access to public transportation	Access to public transportation (5), no access to public transportation (1)
	Access to post office	
	Access to telephone booth	
	Satisfaction of status of information and communication facilities	0–3 km (5), 3.01–5 km (4), 5.01–7 km (3), 7.01–9 km (2), + 9 km (1) 0–3 km (5), 3.01–5 km (4), 5.01–7 km (3), 7.01–9 km (2), + 9 km (1) Very satisfied (5),…, very dissatisfied (1)
Participation	Participation in the two most recent elections	80–100% (5), 60–80% (4), 40–60% (3), 20–40% (2), 0–20% (1)
	To and having some control over political, community, and personal life	Very good (5),…, poor (1)
	Sense of belonging	Very good (5),… poor (1)
	Satisfaction of status of participation	Very satisfied (5),…, very dissatisfied (1)
Freedom	Having certain guarantees of non-interference with certain choices	Very good (5),…, poor (1)
	Satisfaction of status of freedom	Very satisfied (5),…, very dissatisfied (1)
Recreation and leisure	Access to leisure facilities	0–3 km (5), 3.01–5 km (4), 5.01–7 km (3), 7.01–9 km (2), + 9 km (1)
	Access to cultural facilities	0–3 km (5), 3.01–5 km (4), 5.01–7 km (3), 7.01–9 km (2), + 9 km (1)
	Access to sports facilities	0–3 km (5), 3.01–5 km (4), 5.01–7 km (3), 7.01–9 km (2), + 9 km (1)
	Satisfaction of status of recreational facilities	Very satisfied (5),…, very dissatisfied (1)

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Chapter 10
Working for Water: A Baseline Study on the Impact of a South African Public Works Program in Improving the Quality of Life of Program Beneficiaries

Robin Richards

Abstract The Working for Water Program is a national public works program established in 1995 with the aim of bringing the problem of alien invasive vegetation under control and to provide short-term employment and training to unemployed people, particularly in rural areas of South Africa. The program is run by the Department of Water Affairs and combines the principles of sustainable control of alien invasive vegetation with economic empowerment. More than 10 years have elapsed since the program was initiated and the Department of Water Affairs commissioned a scientific study to determine how the program has performed in improving the lives of workers who are part of it. A proportionally selected national representative survey sample of Working for Water Projects, covering a total of 1,005 respondents, selected from all the provinces in South Africa was selected. The research design included a sample of respondents not on the program (a control group) to assess the impact of the program by comparing a range of quality of life indices (objective and subjective) of workers on the program with people who were not on the program, but who were nevertheless living in the vicinity of the program. Working for Water projects were found to be meeting the goal of providing short-term poverty alleviation. Projects provide employment opportunities for people who do not have access to other formal work opportunities. Workers on the program had higher incomes than non-program respondents. The financial impact of the program was evident in the greater spending power and ability of program participants to save in comparison to non-program participants. With respect to subjective indicators of quality of life, the study suggests that subjective well-being was improved through improved living conditions as a result of working on the program and workers were more satisfied with life in general than a year before working on the program. The chapter highlights the importance of baseline studies

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that collect indicators of material living conditions as well as subjective indicators of QOL (or personal well-being). Such studies serve as a platform against which to track the progress of government development programs to improve the lives of beneficiaries, so that limited state resources are targeted in a cost-effective manner by tailoring program interventions to the actual needs of recipients.

The Purpose of This Chapter

The purpose of this chapter is to report on the findings of a baseline study to assess the impact of the Working for Water Program in improving the lives of the program beneficiaries and assess whether their quality of life (perceived well-being) has improved since employment on the program.[1] The indicators reported on in this study comprise components of *community quality of life,* defined by Chambers and Swain (2006, p. 269) as "those factors that affect everyone in the community in a general way." Community indicators therefore broadly measure a community's economic and social well-being. In the context of this chapter "community" refers to the households as well as the residential areas where immediate project beneficiaries live.

The chapter mainly reports on the survey findings by comparing the results of program households (respondents on the program) and the control households (respondents interviewed who were not on the program). However, some select findings from the qualitative research that was also undertaken through the study highlights some of the wider community perceptions on the impact of the program for households and surrounding communities and neighborhoods in which direct beneficiaries live.

The Structure of This Chapter

First, this chapter provides a backdrop to public works programs in South Africa, and where the Working for Water Program is located within the South African government's Expanded Public Works Program. The chapter then describes the aims of the Working for Water (WfW) Program and the methodology used to undertake the baseline study. The main findings of the study are arranged according to the key themes, drawing from indicators that were collected through the baseline study:

- A demographic profile of beneficiary households
- Worker entry and access onto the program
- Worker perceptions and satisfaction with the program as well as their working conditions
- Impact of the program on material living conditions and perceived quality of life.

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[1]For the full report of the research findings see Richards et al. 2007

Background and Introduction

Public Works Programs (sometimes referred to as workfare programs in other countries) are implemented in many developed and developing countries around the world as a means of employment creation and to address poverty. Examples where such programs are implemented include Spain, Britain, the United States of America, Australia, India, Ethiopia, Kenya, Zambia, Tanzania, and Ghana, to name but a few.

In South Africa, Expanded Public Works Programs (EPWP) is one of a number of strategies to reduce unemployment and fight poverty.[2] Another strategy is the Accelerated and Shared Growth Initiative for SA (ASGISA) that aims to halve unemployment by 2014 by accelerating growth levels through state interventions, such as targeted skills development (Eastern Cape Industrial Strategy, 2007).

South Africa's EPWP's aim is to create employment opportunities and skills development and training for a minimum of one million people by 2009 (Department of Public Works, 2006). EPWPs are nationwide and extend across four sectors: social and economic, environment and culture and infrastructural sectors. The Working for Water Program is located within the Environment and Culture Sector and within the core program of Sustainable Based Livelihoods.[3]

According to the sector plan for the Environment and Culture group, the objectives of this sector include facilitating long-term employment through training; linking people in the marginalized "second economy" (such as the informal sector) with opportunities and resources to enable their participation in the "first economy" (formal employment); integrating sustainable rural development with urban renewal; creating land-based livelihoods; promoting community-based natural resource management, and developing the natural resources and cultural heritage (Department of Public Works, 2004).

The Working for Water Program

The Working for Water Program is led by the Department of Water Affairs and has been in existence since 1995. Its aim is to bring the problem of alien invasive vegetation under control and to provide short-term employment and training to unemployed people, particularly in the rural areas of South Africa. Within the sector it is located (Environment and Culture), more than 340,000 employment opportunities have been created over the period 2004–2008 (the Presidency 2008).

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[2]There are a number of other strategies used by government including social grants for the poor, further education, and training programs as examples

[3]There are other core programs within this sector including Working for the Coast; People and Parks; Working for Tourism; Working on Waste

Since more than 10 years have elapsed from the inception of the Working for
Water Program, the Department of Water Affairs decided to commission a reliable,
scientific study to determine how the program has performed over the decade. The
study had a number of objectives:

- To measure changes in income and expenditure of households with members
  employed by the program
- To investigate the household asset base of the program and non-program respon-
  dents
- To explore the monetary and non-monetary differences for households where
  team members were employed
- To investigate intra-household dynamics including gender, age, number of
  dependents, and whether household members earn an income

The Study Methodology

The study comprised quantitative and qualitative methodologies.

The survey component of the study comprised the following aspects:

- There were two main sets of respondents: those who were working on the
  program (the program group/workers) and a control group of respondents not
  working on the program. Face-to-face interviews were undertaken with respon-
  dents.
- The total sample size for the survey was 1,005 respondents. The program group
  was identified through a database of projects nationally that was provided by the
  Working for Water Program. The sample was stratified by project type,[4] program
  type, and province.
- With respect to program type, a smaller subsample from a similar program, the
  Working on Fire Program[5] was also selected to compare against the Working for
  Water Program.

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[4]Before the study, the Department of Water Affairs identified a number of different project types
within the program, consisting of *Contract* and *Collective* projects. These types of projects are
structured differently and it was hypothesised that the type of project may influence the project's
success in terms of improving the quality of life for beneficiaries. Collective projects entailed a
system of profit sharing by workers. Workers appoint a team leader to manage the project and to
decide jointly on various issues such as those relating to wages. Contract projects on the other hand
are managed by contractors appointed by the Department of Water Affairs. Workers are paid by the
department, through a contractor, on the basis of work contracts and, unlike the collective projects,
there is no profit sharing.

[5]The Working on Fire Program is another project located within the Expanded Public Works
Program portfolio. This program aims at an integrated approach to the management of veld and
wild-fire fighting in South Africa. The *Fire* program provides work opportunities to community
members with the aim of tackling poverty and developing skills of workers on the program.

- In the absence of baseline data to determine whether the program was having an impact, a control group, was utilized to compare quality of life indicators with workers.
- The control group respondents were selected in-field. This was done by matching the same demographic characteristics with the randomly selected program respondents. The same gender, age (within 5 years of the age of the program respondent), and level of education were used as the criterion for the selection of the matched control respondents. Respondents in the control group were also unemployed, though they may have engaged in informal, casual, or piece work. Housing type was not taken into consideration though non-program respondents had to be living in the same residential areas as respondents employed on the program.

Qualitative Research

In addition to the survey, various qualitative methods were used to collect data and to explore the impact of the program from a wider community perspective:

- Thirteen Focus Groups were undertaken with workers to explore in greater depth some of the issues covered through the survey.
- Ninety structured face-to-face interviews[6] were undertaken with community stakeholders[7] and project contractors and team leaders. The purpose of these interviews was to triangulate the survey findings from what the workers said about the program, with what other stakeholders said, in order to obtain a multiview picture of the impact of the program.

The Indicators Collected

To achieve the objectives of the study to measure the impact of the Working for Water Program, a wide array of QOL and community QOL indicators were collected via the survey questionnaire. With the exception of perceptions of the program, the same questions were asked to the control group. For the program group, questions pertaining to life before joining the program and while on the program were asked. Indicators that were collected included the following:

- Demographic and socioeconomic indicators relating to households in which respondents were living

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[6]Otherwise referred to as in-depth interviews in the chapter

[7]Community stakeholders that were targeted for interviews included shopkeepers, social workers, teachers, project advisory committee members, and other community workers

○ Household income (including monthly household income; sources of income, for example income earned from wages; social grants; small scale farming, etc.)
○ Age, gender, and size of households
○ Educational attainment levels of respondents
○ Non-income measures of poverty such as access to basic services, type of dwelling, household expenses
○ Savings before and after the program

- Subjective Quality of Life and Community Indicators
  ○ Perceptions of lived poverty (before and after the program)
  ○ Global life satisfaction before and after the program
  ○ Satisfaction with life domains (including free time available; family life; neighbourhood and area; amount of money available; income and family income)

- Perceptions on the Working for Water Program and its impact:
  ○ Type of training received while on the program
  ○ The perceived usefulness of the training for future work opportunities
  ○ Perceived household benefits of being part of the program
  ○ Personal benefits from the program

Data Analysis

Analysis of the survey data was undertaken using a weighted dataset. The data was weighted according to project type (collective versus contract projects) and by province.

Table 10.1 shows the distribution of the sample, proportional to the number of Working for Water projects in each province. In order to obtain a clearer picture of the socioeconomic context of workers on the program as well as respondents who were not on the program, but who nevertheless lived close to where the program was running in neighboring areas, the study investigated the household characteristics

Table 10.1 Number of projects and workers by province

Province	Number of projects	Selected number of projects	Selected number of workers
Western Cape	76	8	181
Eastern Cape	48	5	122
Free state	13	2	20
Gauteng	23	2	32
KwaZulu Natal	94	10	221
Limpopo	24	2	63
North West	14	3	116
Northern Cape	29	2	23
Mpumalanga	36	4	84
Total	357	38	862

Table 10.2 Household demographics

Percent cases	Program		Control	
Household structure				
Household size	5.0	[4.8–5.1]	4.7	[4.3–5.0]
Adult males	1.4	[1.30–1.44]	1.1	[0.97–1.20]
Adult females	1.6	[1.56–1.70]	1.5	[1.35–1.65]
Children	1.6	[1.54–1.75]	1.6	[1.41–1.87]
Elderly	0.3	[0.23–0.37]	0.3	[0.24–0.45]
Household type				
Nuclear	58	[54.1, 61.8]	50	[41.6, 58.5]
Multigenerational	11	[8.4, 13.1]	16	[10.5, 22.5]
Adults only	24	[21.1, 27.6]	25	[18.7, 33.4]
Adults and Elderly	6	[4.7, 8.9]	8	[4.7, 15.0]
Household members earning income				
Average	2.0	[1.8, 2.2]	1.0	[0.8, 1.2]
Education level (of respondent)				
Primary	29	[26.3, 32.1]	28	[22.6, 35.2]
Secondary	55	[52.0, 58.5]	49	[41.6, 55.7]
Matric	16	[13.4, 18.2]	23	[17.5, 29.4]
N	862		154	

of respondents, including household structure and size, average number of people in a household earning an income, as well as the educational level of respondents. Table 10.2 compares program respondents with non-program respondents and Table 10.3 compares respondents within the Working for Water Program, working on different project types (elaborated on earlier).

Table 10.3 Household demographics by program

	Collective		Contract		WoF	
Household structure (percent cases)						
Household size	4.7	(4.3, 5.0)	5.0	(4.8, 5.1)	5.1	(4.7, 5.3)
Household type						
Nuclear	67	[58.8, 74.3]	58	[54.7, 61.5]	51	[42.9, 58.2]
Multigenerational	11	[6.8, 17.3]	10	[8.3, 12.5]	17	[11.9, 23.4]
Adults only	19	[13.3, 26.3]	24	[21.5, 27.3]	25	[19.2, 32.9]
Adults and elderly	3	[1.2, 7.5]	7	[4.9, 8.6]	7	[4.1, 12.1]
Household members earning income (percent cases)						
Average	1.7	[1.4, 1.8]	2.0	[1.8, 2.2]	2.1	[1.9, 2.2]
Education (percent cases)						
Primary	26	[19.4, 33.9]	30	[27.5, 33.6]	2	[0.8, 5.3]
Secondary	54	[45.7, 62.1]	55	[51.7, 58.6]	58	[50.1, 65.2]
Matric	20	[14.2, 27.4]	14	[12.0, 17.0]	40	[32.9, 47.9]
N	100		640		121	

Background Indicators: Demographic Profile of Households

There were no significant differences in household size (both groups have an average household size of approximately five members) or household structure (in both cases about two-thirds of households are either nuclear or multigenerational households). Program households contained slightly more adult males than control households (1.4 compared to 1.1).

A significant difference existed[8] between program and control samples in respect of the number of people earning an income in the household. The program households necessarily contained someone who was employed (on the program) whereas the control respondents were chosen because they were unemployed. Thus while program households reported on average of two people per household employed, a mean of one person per household was employed in control households.

There were no significant differences in education between the two subsamples, less than one in five respondents had a matriculation qualification, and about half of the sample had some secondary education.

The table below summarizes the basic household data for the collective, contract, and Working on Fire (WoF) respondents.

There were no significant differences in household size or household type between the various programs. The average household contained approximately 5 people and the majority of households were nuclear. However, a substantial proportion of households in each group (about 25% of households) contained only adults.

Having, highlighted the main socioeconomic characteristics of the respondents surveyed in the study, the next section focuses on the indicators that were collected on the program itself including how people were recruited onto the program as well as satisfaction with work on the program; type of work they performed while on the program as well as the type of training received while on the program. Work (or a job) satisfaction has been identified as a life domain associated with global life satisfaction by researchers (see for example research undertaken by Sirgy & Rahtz, 2006; and Rojas, 2009). Researchers in the present study therefore included indicators that measured the quality of the *working experience* because of its relationship to the well-being of workers on the program.

Recruitment onto the Program and Length of Time Employed on the Program

The Working for Water Program preferences women in its selection of workers (60% of workers should be female). In order for the program to adhere to these targets, it is critical for the recruitment process to be fair and transparent. Respondents were asked how they found out about the Working for Water program.

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[8]Statistical difference was estimated by examining the confidence interval around the sample estimate at the 90% confidence interval

Word of mouth was the main method of becoming aware of the program. Friends and family are the main source of information about work opportunities offered on the program (Table 10.4).

Other channels for hearing about the program included local contractors and community leaders as well as through other workers on the program. In some cases program officials approached the local chief, tribal court, councilors, municipalities, and even political parties to request their assistance in forming the community about the program. Rojas (2009) notes that poverty alleviation programs should consider the importance of other aspects of QOL besides income improvements derived from such programs. These include the amount of leisure time and social capital factors such as interpersonal relations etc. It is possible that the Working for Water Program improves these other dimensions of QOL, since access onto the program depends to a large extent on community ties, linkages, and social relationships at the local level. Being able to inform friends, community members, and family members about the working opportunities on the program may foster the development of social ties and capital.

When in-depth interviews were undertaken with contractors and team leaders, these respondents claimed to abide by the rule that only one member per household should be employed on the program and that they also abide by the set quotas for women, youth, and the disabled. Awareness of the program and recruitment generally seemed to occur on an informal basis. Length of time working on a project may also be an important community indicator contributing to subjective well-being and community quality of life. Workers, who spend more time working on projects, may derive more income from project work; their households may be wealthier and therefore their subjective well-being may be elevated. This issue is discussed in more detail later in the section on quality of life and subjective well-being (Table 10.4).

With respect to the length of time workers spent on the program, this differed according to project type (contract versus collective projects)[9]; the average length

Table 10.4 How did you hear about the program?

Percent cases	Total
Friends or relatives	33
Contractors	28
Local community leader	25
Other workers on the project	13
Radio	4
Political party	1
Homeless people's federation	0
N	862
Multi-mention	

[9]Just over half of the collective project workers have worked for a total period of 1 month per year, whereas three-quarters of contract workers worked for longer than 1 month per year.

Table 10.5 Average number of days worked per year by gender

	Total	WfW collective projects	WfW contract projects	WoF
Males (in days)	104	27 [22,32]	110 [106,131]	135 [110,165]
Females (in days)	82	33 [28,38]	80 [73,93]	140 [107,165]

of time spent on the program was roughly 2 years.[10] Workers also work on average 4–5 days per week. Workers do not work continuously throughout the year on the program. Their work depends on the number and size of "maps" (the physical size of the clearing projects they are allocated). Although women are preferred in respect of participation and selection onto the program, men work more days on average on the program (Table 10.5). Findings from the qualitative research suggested a number of possible reasons for this: women on the program may fall pregnant, reducing their time on the program while they are on maternity leave and further, in some areas, especially the Western Cape women leave the program to pick fruit or to do other farm work, for which they receive regular payment.

The Working for Water program offers periodic work rather than continuous employment. More than half of the respondents interviewed reported being without work for between 1 and 3 months at a time while on the program and just over half (53%) of the workers claimed to have been doing nothing before they started on the program. Survey findings indicate that workers who have periodic work on the program may be involved in other casual or informal work when they are not working on the program. The main cited reason for giving up their activities that they were involved in before joining the program was because the program paid more than the income they received from activities before the program.

Before respondents were recruited onto the program, slightly more than one in four of respondents who answered the question as to what their main source of income was before working on the program claimed to have either been involved in casual or temporary work or had no source of income at all. When respondents on the program were asked when last they had a job before starting on the program, more than half (64%) reported having a job less than a year ago.

Type of Work on the Program and Perceptions of the Program

When respondents were asked what their main type of work on the program was, the most frequent occupations listed were slasher (29%); general worker (25%); herbicide applicator (16%); brushcutter (12%); and chainsaw operator (6%).

Satisfaction with working conditions on the program was measured using a five-point scale (Very satisfied $= 1$ to very dissatisfied $= 5$). Generally, workers

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[10]In terms of a Ministerial Determination (2002) governing special public works programs, the duration of employment is limited to 2 years within any 5-year cycle

Table 10.6 Mean values for views about the program

Perceptions of the program	Total
Program is well managed	2.0
Work is important to people in the area where you live	1.8
Workers are treated equally on the program	1.8
You are proud to work for WfW/WoF	1.8
People enjoy working on the WfW/WoF program	1.9

Agreement Scale: 1 = Strongly Agree and 5 = Strongly Disagree.
Mean scores on the rating scale are reflected in the table

were positive about the program, with 79% expressing overall satisfaction with the program with an average rating of (2.1%).

Respondents were asked to rate a range of statements about the program. Table 10.6 shows general agreement with most of the statements about the program. Despite worker satisfaction with the program, anecdotal evidence before the study indicated that some problems were experienced by workers. These issues were followed up through the survey research. Workers were provided with a list of possible problems with the program and were asked whether they had been aware of any of these problems occurring on the program (Table 10.7).

The main problem experienced across all the program types was unsafe working conditions. Workers were concerned about snakes and to a lesser extent other wild animals in the forests. Another concern was related to falling or slipping in steep areas. A number of workers complained that the areas they were allocated to were not adequately "scoped" for safety hazards by Working for Water officials and were therefore very dangerous. An additional safety issue mentioned was that workers are not insured against injury while they are being transported to work.

In the focus groups and in-depth interviews, an important issue raised by workers and community stakeholders with respect to working conditions related to the late and slow payment of wages. Some respondents felt that new areas (site maps) for clearing were identified and demarcated too slowly and so there were gaps in between work opportunities on the program and this led to long breaks in between payments. Poor project management also resulted in payment delays. Sometimes

Table 10.7 Are you aware of any of the following problems occurring on the program in your own/other teams?

Percent cases – most frequent concerns	Total
Unsafe working conditions	26
Unfair treatment of workers	16
Victimisation of workers who complain	12
Inadequate/incomplete training	12
Nepotism	9
N	862
Multiple response	

worker invoices for work done were misplaced, slowing payment processes down. Slow payment processes within the Department of Water Affairs and Forestry was another reason for delays in payment. Payment delays ultimately affect the households of workers and depress community quality of life, as suggested in the statement below by a community stakeholder:

> The problem with these projects is that they tend to break for long periods forcing people to stay at home without work. Delays in payment for work done are also a problem with these projects. (Community Stakeholder, Gauteng Province)

Type of Training Received on the Program and Satisfaction with Training

The most common forms of work-related training received by workers on the program were herbicide application and the use of chain saws and brush cutters. Interestingly, employers working on the contractor projects appeared to have access to a much wider range of training, including courses on HIV/AIDS prevention as well as courses on personal finance. In general most respondents (88%) found the training useful and it assisted them in doing their work on the program and they believed the training would be useful to them even after employment on the program (71%). Findings from the focus groups confirmed that workers were generally happy with the training they had received, but were also of the view that the usefulness of the training declined after finishing on the program. A number of reasons were cited for this including training certificates expiring once off the program or not receiving training certificates at all. Respondents believed that training certificates could be used as proof they had undergone the training when they applied for other work. Receipt of training certificates was therefore seen as important as highlighted in the quote below from a worker on the program:

> I can use the training to do similar work as a brush cutter operator, but because we did not receive training papers (certificates), it makes things difficult. (Worker, Working for Water, Northern Cape, Contract Project)

Respondents were asked to indicate what type of work they could apply for (after completing their work on the program) based on the type of training they had received (Table 10.8).

Respondents in the Working for Water contract positions were significantly more likely to report they can apply for agricultural labourer positions (24%) while workers on the fire program were more likely to say they could apply for positions in the Fire Brigade (19%). Noteworthy also is that a substantial percentage of respondents (14%) indicated they could not apply for any position after the program, even with the training they had received. This was especially evident for Working on Fire workers, almost a third of whom indicated they could not apply for any position. This may have been related to the fact that the training workers receive on this

Table 10.8   What kind of work could you apply for after training?

Percent cases	All	WfW – collective	WfW contract	WoF
Agricultural labourer	23	5	24	7
None	14	5	13	30
Small business	8	8	8	9
Other	8	13	8	7
Health care	6	16	6	5
Machine operators and assemblers	5	7	5	2
Craft and related trades	4	0	4	4
Fire brigade	4	1	3	19
Administrative work/officer	3	0	3	5
Drivers and mobile operator	3	8	3	3

program is very specific, focusing on fire fighting and therefore cannot be applied to other types of work.

Measuring Program Impact: Material Benefits and Perceived Quality of Life

This section explores the objective indicators of quality of life that affect subjective well-being. These include income and non-income measures of poverty. This section compares life before workers entered the program with life while on the program. Income indicators of poverty included total household income before and during the program as well as income from other sources. With respect to non-income measures of poverty, the following indicators were used as measures: employment status; monthly household expenditure; access to services; household resources and assets; and credits, debt as well as savings. With respect to household income, before workers joined the program and while working on the program, Tables 10.9 and 10.10 highlight the main findings.

Table 10.9 shows that before joining the programs, respondents' average monthly incomes were lower than when they were on the program. Main sources of income before respondents came to work on the program were informal sector work (including unskilled work) and family support.

Respondents not employed on the programs had significantly lower incomes than those respondents on the program (24% having an income of less than R100 per

Table 10.9   What was your estimated monthly income before joining the program

Respondent group	Average monthly income
Working for water collectives	R728.00
Working for water-contract	R576.00
Working on fire	R851.00

Table 10.10 Estimate your current total household income per month

Total household income	WfW collective	WfW contract	WoF	Control
0–R100	9	7	8	24
R101–R901	54	36	17	34
R902–R1751	22	41	37	26
R1752–R2751	13	13	29	13
R2752–R3751	2	3	9	3
Median income	R901.00	R1251.00	R1751.00	R901.00
N	96	620	120	146
Total percent	100	100	100	100

month). More than three quarters of WFW workers (collective and contract project workers) reported household incomes of between R101–R1751. Comparing these incomes against the Household Subsistence Level (HSL),[11] the household incomes of WFW workers are below the HSL level at 2004 levels. Therefore, despite working on the program, households nevertheless face a struggle for survival to meet their daily needs.

Table 10.11 shows the amounts earned from different sources of income while workers were on the program (excluding social grants). Noteworthy is that with respect to salaries earned from the WfW program, contract workers appear to earn substantially more on a monthly basis than collective workers. Wage differences between the programs may be due to the average number of days workers work on each of the programs. Those on collective projects work for an average of 30 days per year, whereas contract workers work on average for 93 days per year.

Some 61% of respondents reported their households receiving a government grant as a further source of income. The highest proportion of this group (45%) indicated they received Child Support Grant followed by an Old Age Pension. When respondents were also asked whether they produced any food from farming, 41% reported doing so and most products from farming were for their own consumption.

Table 10.11 Household income from other sources

Sources of income	WfW collective	WfW contract	WoF	Control
Money from family members outside	R34.30	R20.61	R26.03	R52.07
Money from other business activities	R34.80	R13.79	R34.71	R95.19
Salaries and wages received	R503.95	R246.62	R248.52	–
Salaries and wages from WfW/WoF	R371.93	R769.46	R1027.64	–
Rand values based on means				

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[11]The Household Subsistence Level is based on the minimum monthly household income necessary to survive. It is calculated on a household size of 5–6 members and is based on the costs of food, clothing, fuel, lighting, washing, and cleaning, house rental, and transport.

Non-income Measures of Poverty

The availability of food, household resources and assets, household expenses, and access to basic services are explored in this section.

Respondent self-assessments of material living conditions provide valuable insights on poverty within households. The availability of food in households was a key question asked in the survey. With respect to the availability of food in workers' households in general, there was no significant difference between workers before the program and whilst on the program. Table 10.12 shows that a large percentage of respondents reported *often* not having enough food in the household (approximately 40%). Workers on collective projects were more likely to indicate that they often do not have enough food in comparison to their counterparts on the other projects (49% of collective workers in contrast to 39% for contract workers and 34% for Working on Fire Workers). When asked how often members of their households skipped meals, respondents were most likely to say that members of their households sometimes skipped meals (40%) or never skipped meals (49%). Workers on collective projects were also least likely to say that members of their households never skipped meals.

When respondents were asked to estimate the amount of money that was spent on a basket of goods and services, for their own and household accounts, food and clothing received the highest percentage share of all expenses in own accounts and household accounts (Table 10.13). Table 10.14 shows the main items workers spent their program wages on. With respect to expenditure on food, workers spent on average between R289.00-R445,00. Clothing expenditure ranged between R390.00–R405.00. Average expenditure on education and basic services ranged from R114.00 to R84.00, while housing expenditure on average was between R140.00 and R187.00. The biggest significant differences in expenditure between workers on the different projects were recorded for workers on the collective projects and workers on the other projects. Workers on collective projects spent significantly less on food, clothing, and housing in comparison with the other groups.

The most common item acquired since working on the program was clothing. Working on Fire workers were also more likely to acquire cell phones in comparison to workers on the collective and contract projects Table 10.15.

Table 10.12 Availability of food in household before and while on the program

Percent cases	Total: before the program	Total: current
We always have enough food	30	29
We mostly have enough food	22	26
We often do not have enough food	40	39
We never have enough food	7	5
N	855	1,014
Total percent	100	100

Table 10.13 Estimate the amount of money spent by the household on the following items

Expenses	Own account		Household account	
	Mean	Median	Mean	Median
Food	26.8	23.9	32.4	31.6
Clothing	24.8	25	19.5	18.01
Transport	12.1	–	12.7	–
Housing	5.3	–	2.5	–
Water and electricity	3.7	–	5.1	–
Fuel	3.5	–	2.7	–
Primary school	2.7	–	3.9	–
Secondary school	2.4	–	3.8	–
Loan	2.4	–	2.9	–
Smoking	2.2	–	2.2	–
Telephone	2	–	1.7	–
Family support	1.9	–	1.3	–
Other	1.7	–	1.1	–
Health care	1.6	–	1.6	–
Drinking	1.4	–	1.2	–
Entertainment	1.4	–	0.9	–
Rates	1.3	–	1.7	–
Pre-school	0.88	–	1.4	–
Aftercare	0.57	–	0.14	–
Gambling	0.5		0.3	–

Table 10.14 In the last month what did you mainly spend your program salary on?

Expenses (percent cases)	Total	WfW Collective	WfW Contract	WoF
Food	80	62	94	94
Clothing	48	31	49	60
Education	23	25	23	17
Basic services	18	12	20	15
Fuel	16	17	17	13
Housing	9	2	10	12
Debt	8	1	7	13
Number of cases	876	100	641	121

With respect to the use of banking/finance facilities before and while working on the program, there were no significant changes in the use of these finance facilities. The majority of workers also reported they were unable to accumulate any more savings than they had before working on the program. Some noted the debt which they incurred while waiting for their wages meant that they had no surplus left over for savings. Noteworthy also was that only 14% of non-program respondents reported being able to save, in contrast to 24 and 21% for contract and collective workers respectively.

When respondents were asked if their debt before and after/during the program had changed, no significant differences in debt levels were reported over the two periods Table 10.16.

Table 10.15   Which of the following items have you been able to buy since the program?

Percent cases	All	WfW – collective	WfW-contract	WoF
Clothing	61	54	61	67
Sleeping mats/beds	33	32	33	37
A cell phone	28	20	27	51
Home improvement	27	11	27	20
A hi-fi/music system/television set	25	19	25	20
Fridge and stove	24	20	24	14
Food and/or groceries	5	10	5	3
Bought nothing	4	12	4	2
Other	6	9	6	2
Multiple response ($n = 862$)				

Table 10.16   Debt before and current debt

	Average debt before the program	Average current debt
Working for Water – collectives	R847.93	R632.4
Working for Water – contract	R839.51	R792.11
Working on Fire	R1471.51	R1387.11
N	213	288

Access to the basic services of water and electricity was moderate for all of the program respondents with some 70% having access to electricity and 60% being able to access communal toilets. Respondents lived in three main types of dwelling structures: formal housing (with bricks and mortar) traditional dwellings and shacks on own stand. Working on Fire workers were more likely to live in formal housing whereas WfW collective workers were more likely to live in formal housing, but also were equally likely to live in shacks. Non-program respondents were also more likely than the other groups to live in backyard shacks or hostels Table 10.17.

Table 10.17   What kind of dwelling does your household occupy?

Percent cases	Total	WfW collective	WfW contract	WoF	Control
House on a separate stand	45	49	44	59	47
Traditional dwelling	18	0	22	15	1
Shack on its own stand	18	44	20	15	3
Backyard shack	6	6	3	0	21
Room in house	5	0	5	2	5
Flat in block of flats	4	0	4	5	5
Hostel	3	0	0	0	19
Other	1	1	1	3	0
Total percent	100	100	100	100	100

Subjective Well-Being and Satisfaction with Life Domains

Those factors in the environment closest to individuals (for example, neighborhood, family life, personal income etc.,) affect global life satisfaction (otherwise known as general satisfaction with life).[12] These domain factors were explored in the present survey to determine whether there was a link between working on the program and satisfaction with various life domains.

Table 10.18 shows the mean scores of respondents when they were asked how satisfied they were with various parts of their lives (these facets of their lives are referred to as domain issues in the quality of life literature). Respondents' scores were mostly distributed between "neutral and satisfied" and "neutral and dissatisfied" on the satisfaction scale shown above. There were no mean scores at the extreme opposites of the satisfaction scale. This suggests moderate satisfaction/dissatisfaction levels. Respondents in the study are least satisfied with aspects

Table 10.18 Can you tell me how satisfied or dissatisfied you are with these parts of your life?

Percent cases	Total	WfW collective	WfW contract	WoF	Control
Income and family income	3.64	3.74	3.56*	3.86	3.96*
The amount of money you have available to you personally	3.59	3.92	3.51*	3.99	3.85*
Standard of living	3.26	3.29	3.20*	3.35	3.57*
The amount time you have to do the things you want to do	2.53	2.88*	2.47*	3.29*	2.56*
Family life – the time you spend and the things you do with them	2.30	2.40*	2.24*	3.17*	2.41*
Your health in the last year	2.29*	2.22*	2.22*	2.25*	2.71*
The way you spend your free time, after work and on weekends	2.25	2.63*	2.13	2.96	2.64*
Your surrounding neighborhood/ area where you live	2.13	2.40	2.09	2.26	2.24

Table based on mean satisfaction levels using a 5-point scale:1 $=$ very satisfied, 5 $=$ very dissatisfied

* $=$ significant difference at 90 Confidence Interval

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[12]This is commonly referred to as the bottom-up spillover theory identified by researchers for example Andrews & Withey, 1976)

relating to their material living conditions such as income and family income, amount of money available, and standard of living. Satisfaction levels were highest for aspects relating to social relations, health, and neighborhood.

Interestingly, for many of the domain indicators of quality of life, significant mean differences in satisfaction levels between the groups existed. The control group in comparison to workers on contract projects were significantly less satisfied with their standard of living and were also significantly less satisfied than all other workers in respect of their health. Noteworthy also was that Working on Fire workers had significantly lower mean satisfaction scores than the other groups with respect to their family life and the amount of time they were able to spend with them. This may possibly be attributed to their working conditions, spending not less than 5 days per week working on projects and also the nature of fire fighting that may require long hours and working shifts.

There were no significant gender differences in respect of the personal domain issues described in Table 10.18.

Table 10.19 shows the actual percent satisfied across the eight personal domain indicators of quality of life. Workers in collective, contract (Water) and Fire projects were least satisfied with money and income and most satisfied with issues relating to neighborhood, health, and family life.

Satisfaction with life in general (global subjective well-being) was explored by asking respondents how satisfied they were a year before the program and how satisfied they are currently. Tables 10.20 and 10.21 show the results of these questions.

Table 10.19   Percent satisfied with various aspects of life

Percent satisfied	WfW collective	WfW contract	WoF	Control
Money	13	29	11	19
Time	53	71	40	67
Family life	75	77	44	71
Standard of living	39	41	36	31
Income	22	28	20	16
Leisure time	68	82	50	68
Health	86	76	76	62
Neighborhood	77	81	76	77

Table 10.20   How satisfied were you with life 1 year before the program?

Percent cases	WfW collective	WfW contract	WoF	Total
Very satisfied	1	8	4	8
Satisfied	40	37	31	37
Neither satisfied	21	17	20	17
Dissatisfied	32	29	39	30
Very dissatisfied	5	9	7	8
N	99	631	116	846
Total percent	100	100	100	100

Table 10.21 Taking all things together, how satisfied are you with life these days?

Percent cases	WfW collectives	WfW contract	WoF	Control
Very satisfied	2	14	8	3
Satisfied	40	51	46	36
Neither/dissatisfied	22	16	14	15
Dissatisfied	31	16	25	36
Very dissatisfied	5	3	7	9
n	100	635	119	153
Total percent	100	100	100	100

When respondents were asked how satisfied they were with life before they started with the program, slightly less than half (45%) reported they were satisfied with life.

With the exception of workers on collective projects and those respondents in the control group, majorities (more than 50%) were either satisfied or very satisfied with life in general while on the program. There were some significant differences between the survey groups with respect to general levels of satisfaction with life. Workers on contract projects were most likely to be very satisfied or satisfied with life than non-program respondents and those working on collective projects. This may be due to material benefits derived from the program. For example collective workers had the lowest monthly household incomes (Table 10.10), derived the lowest wages from the program (Table 10.11), and they were most likely to indicate that their households *often* did not have enough food. Working conditions on the program appear to have influenced other aspects of their QOL, since collective workers worked the least amount of time per year on the project (some 89% reported working for less than a year on the program in contrast to contract workers who spent on average 2 years working on the program) and the fewest days per week on the program (more collective workers reported working between 1 and 3 days per week) than other workers.

Findings suggest that employment on the Working for Water as well as the Fire program may facilitate an improved material quality life that translates into elevated global life satisfaction. Comparing the findings of life satisfaction for workers before joining the program and while employed on the program shows that life satisfaction levels are increased when workers are currently employed on the program and suggests that program participation may improve worker quality of life. There were no significant gender differences with respect to general satisfaction with life.

Findings from the focus groups and in-depth interviews supported survey results on the perceived quality of life of workers. Most workers believed that life had improved for them; however payment issues and irregular employment were of major concern. It is possible that dissatisfaction with these aspects of their work on the program, affect general satisfaction of life scores (reported in Table 10.21).

Some of the typical comments by workers relating to their work on the program and the way this improves their QOL are highlighted below:

No I think that things are much better because now we can even buy rice for our children. We can give them tea with milk and when they are gone to play with their friends they are not hungry (Worker, Mpumalanga, Contract Project)

It's better now but it would be much better if they said work every month and you get paid every month. Now you work, then sometime you don't work and by the time you get paid, you're too hungry to appreciate it (Worker, Eastern Cape, and Contract Project)

I have only one room at home. But now I was able to buy a wardrobe to make the house look better. I also built an outside toilet for people who are renting in my place. . .so I managed to buy a toilet for the people who have rented with the help from the money I get here at working for water (Worker, Gauteng, and Contract Project)

For me it became much better because I end up being able to buy some school uniforms for my kids. I was having some financial problems and I was unable to buy school uniforms for my kids (Workers, WFW and Limpopo)

It helped me a lot because I was able to buy. . . grocery for my family, and I was also able to pay my neighbor who was babysitting my child. (Workers, WfW, Limpopo)

Perceived Program Impact

When workers were asked directly whether they thought they had benefitted from the program, the majority (82%) believed they had. Workers were then asked how they had personally benefited from the program. The results are presented in Table 10.22.

More than two-thirds of all the respondents felt that the program improved the way they felt about themselves. In other words the program appeared to have a direct impact on workers' subjective well-being assessments. Other main perceived benefits of working on the program were work experience, skills acquisition, greater optimism about finding future work, and health improvements.

Employment opportunities and income derived from the program as well as the additional training and skills development opportunities were noted by respondents in comments they made in the in-depth interviews. Some of these issues are highlighted in the responses below by respondents (Table 10.23):

Table 10.22   What ways have you personally benefited from the program?

Percent cases	All	WfW collective	WfW contract	WoF
Improved the way I feel about myself	82	76	83	74
Work experience	79	81	79	81
Skills for other employment	75	77	74	76
Confident about employment	74	74	74	73
Improved my health	74	58	75	69
Made me more positive about the future of my children	71	70	71	61
Understand finances and money better	65	53	65	72
Skills to start own business	55	58	55	42

Multiple response $n = 851$

Table 10.23 Why would you become employable/unemployable?

Percent cases	All	WfW collective	WfW contract	WoF
Improved skills and knowledge	38	37	39	26
Have gained skills or resources to start a business	19	18	20	9
No benefits/training inadequate	8	6	8	16
Gained technical and fieldwork experience	7	6	7	20
Certification assists in securing employment	4	7	4	6
Gained experience in health and safety	4	2	4	2
Pay not enough to prosper or start a business	4	0	4	3
Won't apply for another job	4	0	4	0
Have nothing to show for experience (e.g., certificates)	3	1	3	8
Helped with personal skills and confidence	1	0	1	6
Other	5	2	5	3
Not sure	3	20	3	1
N	824	98	607	119

Open ended question

In the extract below, a respondent reports how the additional training that was received through the program enhanced community quality of life through assistance and support (financial as well as knowledge about HIV treatment and care for example) they were able to provide to other community members:

> We did learn a lot, I see in the township, there are sick people, and you can go and enquire what is going on in that house, and we can support them. If you are at the hospital they also train people how to on HIV. Yes it was helpful. (Workers, WfW, Northern Cape)

When respondents were asked if the program was to end tomorrow what they would most likely do, slightly less than two-thirds said they would seek other employment in the area and just less than one in four would try to start their own business. Interestingly there was a significant gender difference in response to this question. Men were more likely to say they would look for other employment whereas women indicated they would start their own businesses.

The majority of respondents (74%) also believed that the skills they had acquired through the program would assist them in securing future employment or in starting their own business once their work on the program had come to an end. When asked why they thought they would become more employable after having been on the program, more than a third said that their improved skills and knowledge from the program would help them find work. A project leader on one of the programs summed up the reasons for this perception:

> These people never had permanent positions before. Now the project offers training, social, and work skills to them. These skills should enable them to acquire other jobs. Not all

training is relevant, some are. First aid is valid everywhere, together with health and safety. Chain saw operators can also obtain other jobs beyond this (Project leader, Western Cape, Working for Water).

Conclusions

This was a baseline study assessing the socioeconomic impact of the Working for Water program on households. In view of the dearth of information on the program's impact, a wide range of indicators were collected including both objective measures of QOL such as workers' material living standards as well as subjective measures of QOL such as satisfaction with life in general and also satisfaction with aspects of life closest to workers such as their neighborhoods; family, and personal income among others.

The findings showed that projects were meeting a goal of providing short-term poverty alleviation, but despite this most workers continued to struggle to meet their basic needs and wages from the program were not continuous. The study showed that there were inter-project variations in material living conditions and experiences of lived poverty. For example workers on collective projects were worse off than those on contract projects, both in terms of household income and their ability to buy household goods and services. Collective workers were also more likely to say that their households *often* did not have enough food while working on the program.

Besides the positive effect of improved living conditions on quality of life and subjective well-being, the program also contributed to a positive sense of well-being among workers in other ways. For example workers reported that through working on the program, their self-esteem had been boosted. The training they received on the program gave them more hope of being able to find future employment. Additionally, workers also reported being able to make a positive contribution to community quality of life, by being able to support their families and serve the communities surrounding them through some of the skills they had received, particularly around HIV training and basic financial management.

One of the intriguing aspects to the findings of the study that requires further investigation is the extent to which community quality of life can be elevated through improvements to the way the program is managed and through other aspects that boost worker satisfaction (and therefore quality of life) with the program such as improved training and extending the range of training opportunities. These are important questions because the sustainability of the Working for Water Program and its further extension into other impoverished areas depends on the efficient and effective use of existing limited state resources, while at the same time maximizing the impact of the program and improving quality of life.

Implications and Lessons for the Future

The ANC government that was elected in 2009 placed greater emphasis on improved service delivery, the creation of decent work opportunities for South Africans, and

the reduction of poverty among other goals. To help achieve these objectives a National Planning Commission has been established to oversee the development of a long-term National Strategic Plan for South Africa. The commission is also supposed to investigate trends in development such as in the areas of poverty, health, etc. In addition to this commission, a performance ministry with a set of clearly defined outcomes against which performance can be measured has been established. The outcomes stem from government's five priority areas of development, in the portfolios of education, health, jobs, rural development, and safety and security.

The baseline study reported on in this chapter provides valuable information and insights for the tracking of the Working for Water Program in the future, particularly with respect to the socioeconomic and quality of life impact of the program on beneficiaries as well as residents living in areas where the program is being implemented. This study can serve as a guide and set of lessons on the method for the collection of baseline data on the impact of other public works programs and government initiatives to tackle poverty. Some of the key lessons to be learned from this study are the following:

There is a need for up-to-date, reliable, baseline socioeconomic data against which to assess the impact of development projects and programs. Møller and Dickow (2002) highlight the important role that such studies have played in South Africa's transition. Quality of life surveys help to fill the information gap, especially during the "in-between" periods of South Africa's National Census, now undertaken at 10-yearly intervals.[13]

Once baseline QOL studies have been undertaken, ongoing monitoring of such programs should be undertaken at 3-year intervals at least. It is important to include indicators of material living conditions in follow-up studies together with citizens' own views of their living conditions and well-being after development programs have been implemented to assess the impact of such programs. This helps in the assessment of the impact of the program and can also provide valuable information to government officials and planners if changes to the program are necessary. As already highlighted, community quality of life contributes to overall quality of life and well-being and therefore, follow-up tracking studies should include such dimensions in their design. Community quality of life looks beyond immediate indicators of program impact such as employment creation to other aspects such as general neighborhood improvement, social cohesion, and living standards.

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Chapter 11
Integrating Tourism into Sustainable Urban Development: Indicators from a Croatian Coastal Community

Branko I. Cavric

Abstract This case study gives an example how the cities of post-socialist Croatia could use urban indicators for monitoring and measuring the progress toward sustainability. Such information would enable planners and decision makers to formulate redistributive policies and programs addressing some of the disparities that exist in a post-socialist city. It focuses on the current situation in the emerging Croatian coastal city of Zadar, which reflects the diversity of the post-socialist urban change in a very fragile Mediterranean landscape. It describes the participatory approach through which different local communities were evaluating the quality of life based on five basic pillars of sustainability. Through direct participant involvement and in-depth interviews, the research team has managed to develop a structured and multilayered GIS database suitable for decision makers at the city and local levels. The conceptual implications of the findings contribute to rebuilding of "bottom-up" participatory approach in the process of creation and management of urban spaces.

Introduction

Post-socialist cities of east and southeast Europe are increasingly becoming the focus of scientific and professional interest. Their spatial transformations, caused by changes in the socioeconomic and political sphere are of special interest. In the case of Croatia, which is being considered here, its candidature for EU membership has given rise to questions of compliance with regard to planning efficiency and managing of urban resources. Additionally, Croatian cities are an integral part of the former Yugoslavia and today's Western Balkans, and are still trying to find the most suitable solution for regular control and monitoring of urban development. In fact, Mediterranean Croatian cities are of special interest as they present a unique

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laboratory for urban history and biodiversity due to the specific character of the natural and built environment. Unfortunately, these cities are becoming exposed to unprecedented urban sprawl and numerous environmental stresses triggered by expansive commercial tourism and real estate development. Here, insufficient public participation in the planning and land development process makes promoting adequate development control difficult. Further, it is evident that there is a deficiency of a formally educated planning cadre capable of applying modern planning concepts, methods, and techniques. The fact that only two implementation instruments from the previous political system (i.e., planning and building permit) are being used is a cause for concern. Every attempt for innovation is repressed by joint political and financial lobbies which are interested in achieving only their own goals. These problems are present in almost all larger urban tourist centers of the Adriatic such as Dubrovnik, Split, Pula, and Opatija. A similar situation prevails in Zadar, which is specifically selected for discussion based on its excellent transportation connectivity, pristine environment, and room for expansion. These characteristics place this emerging tourist hub in the category of what is considered very attractive southeastern Europe coastal cities.

The overall objective of this chapter is to summarize results of the National Association for Science (NZZ) research (Cavric, 2009) which investigated possibilities, and developed an interdisciplinary indicator system model, for sustainable urban development measurement of Zadar. The proposed model recognizes the inherent complexity of five major sustainability components (natural, built, social, economic, and political) and is based on a participatory GIS indicators' framework applied at local community level.

Transitional Post-socialist Urban World and Planning for Sustainability

During the last 20 years most post-socialist European countries passed through a rough period of intensive political, socioeconomic, and physical transformation. Transition from central planning to market-oriented management offered vast possibilities for the improvement of economic prosperity as well as the quality of urban life (Tsenkova, 2000). Similar to other neighboring countries of the Western Balkan region, urban Croatia finds itself caught between the demands for faster economic development, improvements of people's quality of life, and demands for protection of urban landscape and natural heritage (Cavrić, Toplek, & Šiljeg, 2008). Numerous government and nongovernment agencies together with citizens' associations are making efforts to find compromises and solutions that meet public and private needs, and to direct and manage urban resources. At the same time, numerous local and foreign investors operate on strictly profit principles which, most often, are in opposition to proclaimed public interests. Either acting independently or being assisted by well-positioned politicians, local tycoons, or interest groups lobbyists, these investors are usually not bothered by social justice demands (i.e., ensuring that all citizens have access to basic urban services and resources and enjoy a quality urban environment). These issues are especially noticeable in the Croatian capital of

Zagreb and other major cities along the Adriatic coast such as Pula, Rijeka, Zadar, Split, and Dubrovnik (Cavric & Nedovic-Budic, 2007).

Although the concept of sustainable urban development (SUD) has been implemented worldwide since 1987, in Croatia it is still practised mainly within a declarative sphere full of rhetoric. As such, the life of urban dwellers in Croatia is not governed by such mundane ideas as "healthy," "intelligent," "safe," "global," "informational," and "computerized" cities (Castells, 1989; Hall, 1999; Saskia, 1991; Stephen, 1997).

Unfortunately, processes of urban sprawl, concreting of the coastal line, and mushrooming of huge shopping centers dominate the modern Croatian urban milieu. Of special interest are the still untouched parts of urban fringes, coastal pockets, and rural hinterlands of Adriatic cities. In enclaves of outstanding natural beauty and green belts, traditional ways of sustainable touristic development are slowly giving way to commercial apartments and urban villas. All these suggest little or no input from local communities. City and county government officials lack adequate human resources and the technical potential to tackle the problems at hand, and have become susceptible to the pressures of daily politics and corrupt practices. The very concept of economic "trade-offs" is an influential paradigm, and all sorts of natural and human resources are monetized in that process. The basic clues about the stocks of non-renewable and finite resources and assets for future generations are ignored in the contemporary debate taking place among different stakeholders and decision makers. The pace of intensive urban shift and evident urban land cover changes suggests that human activity in the new transitional circumstances may already be undermining the future of prudent development.

From a sustainable development perspective, it is very hard to influence or change the present situation without being in conflict with the actual creators and executors of unsustainable land development practices. One possible course of action is to increase people's awareness of local development issues and to actively include community perspectives in development projects. Some authors and reports (Selman & Parker, 1997, Roseland 2000, UBC Task Force on Healthy and Sustainable Communities 1994; WRI 1995) are suggesting that "community civicness," "sense of place," and increased "social caring capacity" are key factors for maximizing the potential of local communities as sustainable development change agents.

For a successful change of social practice which leads toward improvement of quality urban life, it is essential to establish a connection between knowledge and action. In addition to that, knowledge should be systematized as intelligible and objective information (indicators) about situations, changes and trends in space, society, and environment. Regarding that, building of a support system with various indicator types is an imperative for a good quality urban planning, monitoring, management, and governance (Wong, 2002). The processes of European integration and international globalization have triggered the development of numerous indicator frameworks (economic, social, environmental) suitable for objective reporting and stimulation of public awareness and debate at the international, national, sub-national, and local levels. As Noll (2002) has observed, "the availability of

appropriate knowledge and systematic information on social conditions within and across European societies as provided by social monitoring and reporting will be of crucial importance to enhance European integration and cohesion and to create the Social Europe of the twenty-first century."

This fact is especially significant in a situation when Croatia is adjusting to European standards and systems. Indicators of sustainable urban development present one of the fields wherein the adjustability and transparency with similar European initiatives and programs is expected.

Justification for Sustainable Urban Development Indicators (SUDI)

The need for communal and urban development indicators, especially for those indicators which contain the word "sustainable," is becoming an increasing world phenomenon. So widespread is the popularity of this phenomenon that a web search on the subject of indicators can yield more than 6 million hits, starting from UN agencies and the World Bank to over a thousand city portals. The history of indicators development can be traced back to the USA, in the 1940s, when the first economic reports emerged. This trend became more extensive by the beginning of the 1960s when there was a popularization of so-called social indicators, and later after 1993, when the first group of more complex OECD (1997) urban indicators were developed. A call for indicators development was made after the summit in Rio de Janeiro and publishing of Agenda 21 (UNCED, 1992). Shortly after, at the HABITAT II conference in Istanbul (1996), the implementation of urban indicators was initiated. Within these campaigns some bigger cities developed their indicators models (Sustainable Seattle and Jacksonville, 1993), establishing an urban dimension of indicators research. Europe started a whole cluster of projects, among which the best known is ESPON-EUROSTAT Urban Audit (1998, 2000), but good results have been achieved on regional initiatives (COAST, AZO, Ambiente, Mediterranean strategy, etc.,).

Although the occurrence and application of indicators in monitoring have intensified during the past decade, only a limited number of citywide indicators projects have been designated exclusively toward monitoring and evaluation of urban performance (Hoernig & Seasons, 2004; Holden, 2006). The need for more urban indicators frameworks is of great importance due to massive impact triggered by worldwide city spread and development and the need for appropriate city-level datasets which may be used in urban policy formulation. Using indicators to measure progress is not new. However, what is new is how sustainability indicators interconnect between changes in the economy, the environment, and society and link to the long-term economic, social, and environmental health of a community (Hart, 1999).

It has also been confirmed that transition and globalization have created enormous challenges and benefits for post-socialist European cities (Cavric and

Budić –Nedović 2007; Hirt & Stanilov, 2009; Milovanovic, 2001; Tsenkova, 2000). However, these two movements are also linked to environmental degradation, and social and economical polarization concentrated in cities (Berke & Conroy, 2000; Saskia, 1991; UNCHS 2001). There is also a notion that solving the issues of urban sustainability (economic, social, and spatial) entails holistic and integral approaches wherein local authorities should play the main role in implementing the changes. Decentralization of responsibilities from central to local level is carried out under the influences of factors such as democratization, the fall of the centralized author-itarian system, and the absence of chronic financial constraints. Simultaneously, it has been recognized as fact that the biggest problems have urban origins or have the most significant effect on urban communities; therefore they can be subsequently solved at a local level.

There is a similar situation in Croatia too, particularly after the disintegration of the former Yugoslavia and the turmoil of a war in which significant socioeconomical and political adjustments occurred. Having accepted the capitalist model of manage-ment Croatian cities became extremely dominant in spreading various positive and negative effects. The capital Zagreb and its surrounding metropolitan region has taken a lead, even though significant changes have occurred in coastal cities whose Mediterranean surrounding and character are very susceptible to stresses beyond sustainable biological, spatial, and socioeconomic capacities. It is within this con-text that the research on SUDI, discussed in this chapter, has an outstanding strategic justifiability. With private sector participation expanding in the operation of infras-tructure and services, there is increased need for performance indicators as an input for regulating private companies and investors (Westfall & De Villa, 2001).

Indicators: Nature, Definitions, and Frameworks

Various definitions and indicator applications can be found in a growing body of scientific literature as well as in numerous initiatives (OECD, 1999; UNCHS, 1994; UNCHS Habitat 2001; UNDSD 2004; WHO, 1993; World Bank, 2003). A major-ity of these emphasize the multifunctional character of indicators. The accent is on their role to facilitate the decision-making process through description, simpli-fication, measurement, trend identification, clarification communication, and action instigation (Hoernig & Seasons, 2004). The term indicator is derived from the Latin word *indicare*, meaning "to give information" and, in the Arabic language, it means "pointer" or something to "point out" or "proclaim" (Flood, 1997; Smolko, Strange, & Venetoulis, 2006; Westfall & De Villa, 2001). Indicators point to a problem or condition, showing where we stand now, where we are going, and how far from the desired objective we are, or, to place it in an urban context, how well our city is doing. Is it a "good" place to live or is it getting better/worse? (Stuart, 1972). In practice, indicators point out processes and phenomena, their changes and trends, make comparison of achieved values, benchmarks, standards, and much more. In its simplest definition, a good indicator signals the existence of a problem and points out the necessity to take action in order to eliminate or alleviate the problem.

The aim of indicator design is to support a process of decision making which relates to strategic policy goals and objectives (Gahin & Paterson, 2001). Compared to standard statistic information, indicator development involves experts who are familiar with complex environmental and social processes and possess strong analytical skills and interdisciplinary knowledge. In the case of urban applications the nearest to this ideal of "an indicators expert" are among others, spatial planners and environmentalists, as well as practitioners with operational knowledge of geographic information systems (GIS). The essential prerequisite for these specialists is an ability to create a meaningful coverage for comprehension of complex phenomena and their functioning.

The use of *statistics* and other official *raw data* is the first step in the process of indicators design. However, the final outlook of every indicator depends on the competency and imagination of its creator. From an informatics point of view a vast majority of indicators originate from diverse types of primary and secondary data contents located at the base of the information triangle (Fig. 11.1). After additional and assorted processing all these records are transformed into information called *indicators* suitable for interpretation and use in planning, policy analysis, and decision making. The most advanced form of indicators is *indexes*. They represent a customized synthesis of several indicators, re-shaped and merged into clusters suitable to measure the overall complexity of the object of study. Most commonly these are shown as diagrams, maps, graphs, schemes, tables, and pictorial illustrations. These forms of appearance enable people (and especially those who make decisions) to see the essentials in the simplest and quickest possible way.

Efforts involving the design of indicators focus on several major frameworks which are widely accepted in the international arena. The multiple scale, scopes,
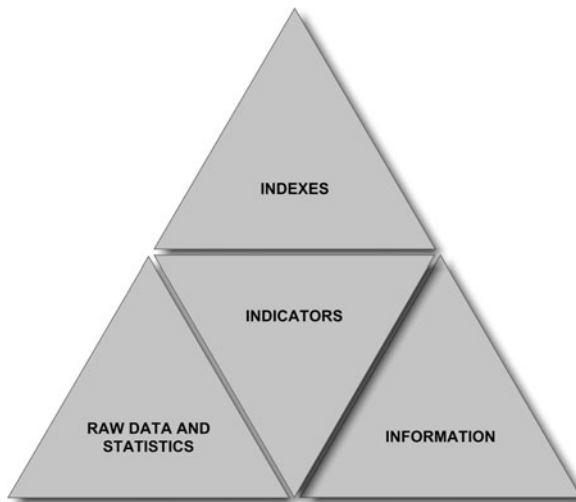
Fig. 11.1 The structure of information pyramid. Source: Redesigned based on Spreng and Wils (1996), Zegras, Poduje, Foutz, Ben-Joseph, and Figueroa (2004)

Table 11.1 Summary of the most common indicator frameworks

Framework	Indicator types	Focus
Conventional	• Economic • Social • Environmental • Urban metaphors	• Income, employment, production, growth, inflation • Social functions, conditions, interrelations, changes • Structure, functions, and dynamics of ecosystems • Urban analysis and powerful city-based goals
Integrative	• Sustainability • Healthy cities • Quality of life	• Integrated environmental, social, and economic issues • Public health principles • Assessment of individual well-being
Performance and policy	• Performance measurement • Benchmarks • Stakeholder consultation • Strategic planning	• Progress monitoring based on goals and objectives • Best practices among subjects in competition • Conflicting views of different players in policy arena • Norms and policy objectives
System and causal chain	• Pressure-state-response • Driving force-state-response • Driving force-pressure-state-impact response	• Human and economic activities pressures • Beneficial and harmful environmental impacts • Emissions, state, and environmental changes

Source: *Compiled by Cavric based on* Hoernig and Seasons (2004), Innes and Booher (2000), Niemeijer and Groot (2008), Sawicki (2002), Westfall and De Villa (2001).

and times of these frameworks show that urban sustainability needs to be managed as a product of many stakeholders and their actions. Basically, the choice of indicator framework could be guided by different conceptual approaches summarized in Table 11.1 (Hoernig & Seasons, 2004; Innes & Booher, 2000; Niemeijer & Groot, 2008; Sawicki, 2002; Westfall & De Villa, 2001). Even though the list in Table 11.1 is evident, the actual selection depends on the study area, the scope, and spatial resolution.

The concept of urban indicators complexity is embodied in all indicator frameworks presented in the above list. The question is how some of their specifics might help to bridge the gap between urban community needs and expectations on one side, and officials and governors who make policies on another side. To secure monitoring effectiveness and successfully manage a versatile urban fabric, the development of any SUDI needs to be rooted in an interdisciplinary approach. The majority of well-known studies and projects which are predecessors of the modern notion of SUDI development in EU today were done in this manner (Table 11.2).

Table 11.2 European chronology on spatial and urban development reporting

Date	Title	Author	Type	Description
1987	4th Environmental action program	EU	Programme	Introduces for the first time an integrated approach to urban environment at European scale
1990	Green paper on urban environment	European Commission – EC	Communication	This paper was a landmark on urban environment
1991	European Commission expert group on the Urban Environment	EC	Advisory group	Considers how future town and land use planning strategies could incorporate urban environmental objectives and policies within EU
1992	Treaty on EU (Maastricht Treaty)	EU	Treaty	Refers to environmental protection in instrumental terms as being necessary for economic growth
1992	5th Environmental action program	EU	Program	Sets the environmental agenda and introduces the EU policy for sustainability requiring an integrated approach
1993	The DOBRIS assessment of Europe's environment	EEA	Report	Contains a detailed analysis of the state of the environment in Europe's urban areas
1996	Sustainable cities report	EC expert group	Communication	Promotes the use of indicators to measure the progress toward sustainability
1997	Amsterdam Treaty	EU	Treaty	Integrates sustainable development as one of the objectives of the EC
1997	Toward an urban agenda	EC	Policy paper	Sets out the key challenges which affect cities and proposes directions for future actions in promoting sustainable development and the quality of city life
1998	DOBRIS+3	European Environmental Agency – EPA	Report	Reports on the pan-European state of the environment (including urban)

Table 11.2   (continued)

Date	Title	Author	Type	Description
1998	Urban Forum	EC	Conference forum	Aims to adopt European policies for the sustainable development of urban areas and launches the URBAN initiative
1998	Sustainable development in EU – A framework for action	EC	EC Communication	Evaluates existing and planned activities to support local sustainability and explore methods to monitor progress on Local Agenda 21
1998	Urban Audit	EC	Program	Promotes the use of indicators covering five fields such as (1) socioeconomic aspects; (2) participation in civic life; (3) training and education; (4) environment; (5) culture and leisure
1999	European spatial development perspective – ESDP	EC	Document	Conveys a vision of the future balanced and sustainable territorial development of the EU
2000	Hanover Call	Sustainable cities campaign	Charter	Emphasizes the priority of local sustainable development as the basis for a sustainable society
2001	6th Environment action program	EC	Program	Provides the environmental component of the Community's forthcoming strategy for sustainable development
2001	A sustainable Europe for a better world: A European Union strategy for sustainable development	Commission of EU communities	Communication from commission	Long-term strategy dovetailing policies for economically, socially, and ecologically sustainable development

Source: EPA (2002).

The main conclusion from the above foreign projects is the application of the *information demanding approach* in which indicators become foundations for creating a spatial and environmental policy. Without their application the decision-making process is irrelevant, especially regarding space and politics, and their use in urban and regional fields. In almost every researched study and work from over more than 30 refereed scientific journals the accent is on a "spatial dimension" of indicators. Currently in Croatia there is still a dominance of methodologies from the previous political system and the time when the majority of today's senior planners (mostly architects) were educated. In such a situation, new approaches and models demand changes which cannot be achieved overnight. For quality change it is essential to educate a completely new generation of interdisciplinary experts specializing in integrated spatial and environmental management (Cavric 2009a).

Understanding of theoretical ideas and political context is of primary interest in the process of indicators development, which is then used in the process of political decision making. Changed political agenda in the world and in Croatia, and especially in the EU, will lead to four basic development trends. First, the use of indicators as means for resource allocation in many strategic regions will influence an array of government activities on all levels, starting from national through regional, all the way to local activities. Second, the trend will influence centralization of instructions for monitoring and control, combined with decentralization of responsibilities for data collection. Third, the region of development will be a gradual transition from classical policy decision making (still without the support of indicators) to so-called decision making based on evidence in the form of indicators, indexes, and models. Finally, a production of indicators will be moved from a simple transparent approach toward more complex statistical and mathematical modeling and the use of modern index and IT technologies, which was also a case with the NZZ project where GIS has been tested as a technological indicator's platform.

Research Methodology

Approach

The above gave rise to a logical question. For the cities in Croatia, there were no previous examples of SUDI scientific reporting[1] except from the Croatian National Committee for Habitat which summarized the first efforts in this direction (2003). As such, the question was which approach should be chosen for the NZZ project.

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[1]This conclusion has been made on the basis of consultations with colleagues from the fields of expertise such as geography, urban planning, and environment protection, as well as based on the information obtained from the web sites of the Ministry of Science, Education and Sports of the Republic of Croatia. For the latter, we could not find a single title with similar issue within the registry of scientific projects approved and elaborated since 1990 to current date.

From the beginning, the idea was to create a balance between available time, technology, financial, and human resources available for the project execution. It was also important to decide how to opt for a case study city whose development profile, spatial extent, and urban form did not obstruct field survey efficiency, and visual and spatial forseeability. Overall the basic motive was to test and combine the best aspects of analyzed international indicators frameworks and to recommend a model suitable for Zadar and other Croatian cities.

Theoretical Background

An initial step was the recognition of the most recent trends in applied indicators research which helped in outlining a theoretical framework suitable for indicators model design for Zadar. It included a compilation of authors' works which were involved in sustainable development of the city underpinned by "urban metaphors frameworks" divided into four major themes: environment, economy, social well-being, and governance (Table 11.3).

The conclusion was that although there are a number of approaches within the framework of the four categories mentioned above, terms such as "sustainable development" and "sustainable cities and communities" are always concentrated and focused on sustainability, development, community, community capital, and their carrying capacity (Daly & Cobb, 1989; Meadows, Meadows, & Randers, 1992; Minnesota Planning, 1998; UNDES 1998; Wackernagel & Rees, 1996). In

Table 11.3 Urban metaphors as sources of urban indicators frameworks

Key issues	Theoretical concept	Author
Environment	Ecological city	OECD (1995)
	Sustainable city	Newman et al. (1998)
	Exploding city	Devas and Rakodi (1993)
	Megacity	Hall (1998)
	Compact city	Jenks et al. (1996)
Economy	Human innovation city	Maillat (1991)
	Information city	Castells (1991)
	Entrepreneurial city	Gaye (1996)
	Competitive cities	Brotchhie et al. (1995)
Social well-being	Livable city	Pressman (1981)
	Multicultural city	Sandercock (1998)
	Health city	WHO (1990)
	Safe city	Oc and Tiesdell (1997)
	Whose city	Pahl (1975) and Harvey (1973)
	Divided cities	Fainstein et al. (1992)
	Likable city	Nasar (1998)
	Convivial city	Peattie (1998)
Governance	Designer cities	Corden (1977)
	Intentional cities	Jensen (1974) and Troy (1996)
	Creative cities	Hall (2000)

Source Newton et al. (1998) in Westfall and De Villa (2001).

that manner a sustainable community (city) is considered the one which is able to develop its own natural, social, and economic capital which will enable its population to have a healthy, productive, and happy life. At first sight, sustainability is a matter of nature and environment. However, there are questions: Are the natural resources enough and are those resources only for a chosen few? Additionally, will these privileged few deplete these resources thereby depriving future generations of the ability to survive and lead good-quality lives?

Urban sustainability also means spatial-social organization and differentiation. It focuses as well on the complexity of economic and cultural activities; care of life quality; the well-being of citizens; ethics; systematic organization; urban management; and the public participation and cooperation of all interested individuals in city. Because of all these factors, treatment of sustainable city development is not limited only to the ecological dimension. It is based on a multidimensional platform and falls under an umbrella where the dynamics of complex natural, physical, and socioeconomical systems coexist. Conversely, a conceptual mistake can easily be made because "sustainable development" is at the same time a normative and descriptive concept. It is very important that those within the political process who, as far as it concerns the city and its resources, are decision makers, ensure that sustainable development does not become a justification for supporting and popularizing the positions of various influential individuals and interest groups.

Economist Herman Daly (1973) points out that at the base of sustainability is the concept of carrying capacity toward which "a sustainable development demands a quality promotion without a quantitative development until the level where certain natural and human eco-systems cannot be re-generated" (Gredier, 1998). Planners Berke and Conroy (2000), regard sustainable development as "a dynamic process, where local communities expect and predict needs of present and future generations, in a way to reproduce and balance social, economical and ecological systems, connecting local actions with global processes."

Questionnaires were distributed to city planning officials seeking their response to these questions: Is Zadar a good place to live in? Is life becoming better or worse? Do we as city planners successfully do our job? Are we responsible for others and ourselves? Are plans and programs directed toward the most salient problems and city needs? And, most importantly, do we promote sound environment quality for the betterment of the lives of citizens? And, also, how have we managed to influence some difference (negatively or positively) during the last transitional decade?

The answers to these questions demand a special type of urban information, not only the usual data and statistics, but also "indexes" which measure or indicate how good Zadar is. Keeping that in mind, urban indicators were designed to enable social well-being measurement within the boundary of the City of Zadar master plan, and incorporated social, economical, cultural, ecological, and other important dimensions. Unfortunately, experience of planning services with indicators in Zadar and other Croatian cities do not exist. For that reason, the NZZ project has suggested a preliminary framework of indicators system of sustainable urban development. This system can be promoted and successfully used as a regular mechanism in a process for future urban and spatial planning.

Process

Regarding available time and means, the NZZ project team decided to survey citizens in 21 local communities (neighborhoods) of Zadar. They also created a cluster of indicators on the basis of primary data collected for five thematic areas of sustainable development: natural, built, social, economical, and political environment. Primary data collected through intensive field survey, after scientific and expert analyses, were combined with secondary data from other sources. In that way, a scientific approach was achieved, in which the research combined opinions of citizens with the knowledge of NZZ team specialists in area of urban planning, sociology, geography, and GIS. The primary intention, here, was to measure and chart public perception regarding the integral quality of urban life and environment in Zadar. This confirms previous studies (Revvi and Dube, 1999; McMahon, 2002; Golubic and Marusic, 2007; Moles et al. 2008) which show that a mixture of empirically measured trends and public opinions give the best results in measuring urban health and sustainability.

The proposed model is a good example of combined indicators approach to sustainable urban development which includes (i) values given on the basis of citizen's surveys; and (ii) values figured out through scientific analysis, mathematical and statistical calculations with the notion of forming so-called indicators of smart growth. Values given in first group represent the communal indicators category. Citizens were involved directly (at the grass-root level within the perimeters of their local communities). They worked together with experts who played the role of facilitators, mediators, and creators of the GIS database where all collected data have been deposited. The whole process employed dialogue between space users and the members of the scientific team with the aim of achieving mutual conclusions regarding Zadar urban environment and its problems and potentials (Fig. 11.2).

This kind of approach proved to be correct because in Croatian spatial planning and management, the "top–down" model still dominates. Politicians and professionals want to plan "for citizens instead to plan together with them," imposing turn-key development solutions without serious public participation and consultation of other urban actors. For that reason, the project objective was to create a dialogue between local communities and institutions responsible for providing citizens' services. After saving all information in the GIS database, the analytic process and the forming of indicators sets within the framework of five sub-categories of sustainable development (natural, built, economical, social, and political environment) took the place. As a result, it was possible to come out with a variety of indicators generated at both city and community levels.

Spatial Scales

The NZZ project has recommended a 4-tier spatial hierarchy composed of (1) an area covered by the latest City of Zadar master plan (2) territories of 21 local communities, and (3) numerous census tracts divided into (4) a vast number of enumeration areas demarcated by the State Bureau for Statistics (DZS). For all these
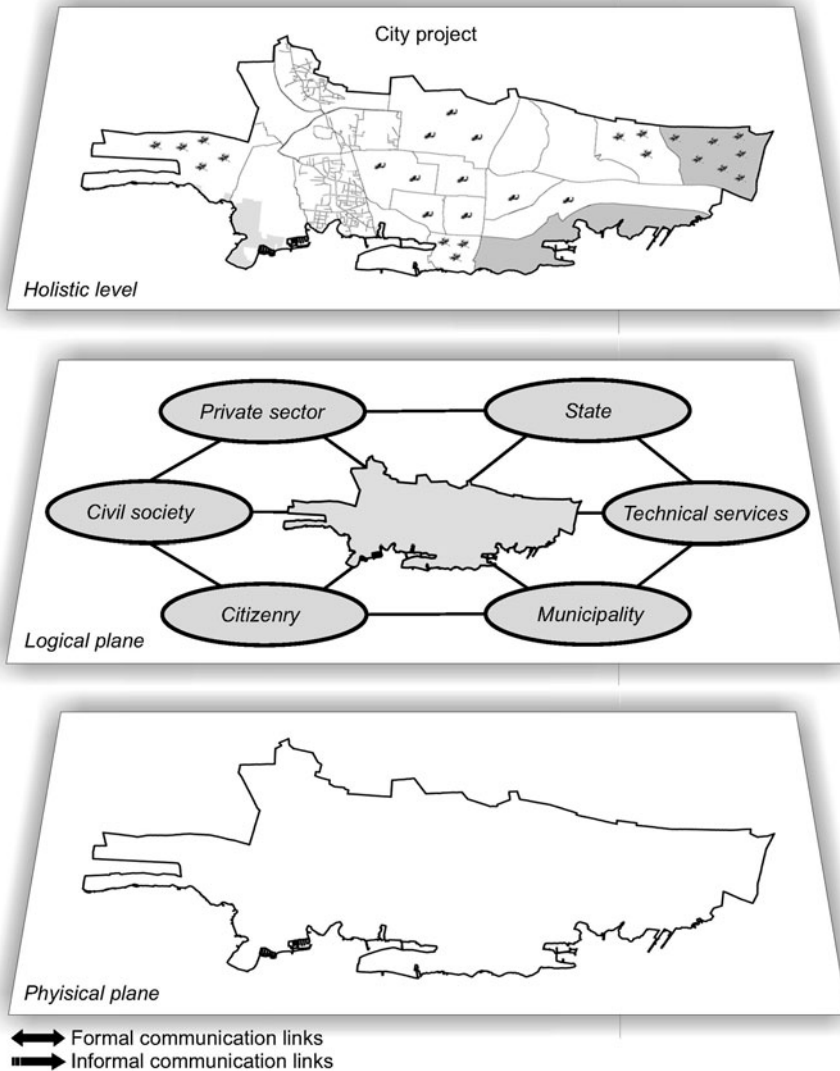
Fig. 11.2 The spatial and organizational levels of SUDI scrutiny (from city to grass roots). Source: Adapted and redesigned for a case study of Zadar based on Repetti and Prélaz-Droux (2003). Credits for graphic Siljeg (2008)

spatial units adequate maps and diagrams in different mapping scales, and digital analogue formats were available through municipal land survey and cadastral departments. In addition, the majority of indicators were prepared in GIS format suitable for distribution and data compilation at any spatial level (Fig. 11.3).

Concerning the basic content of SUDI indicators cluster the goal was to (1) make output results available to urban managers, professionals, and ordinary citizens;
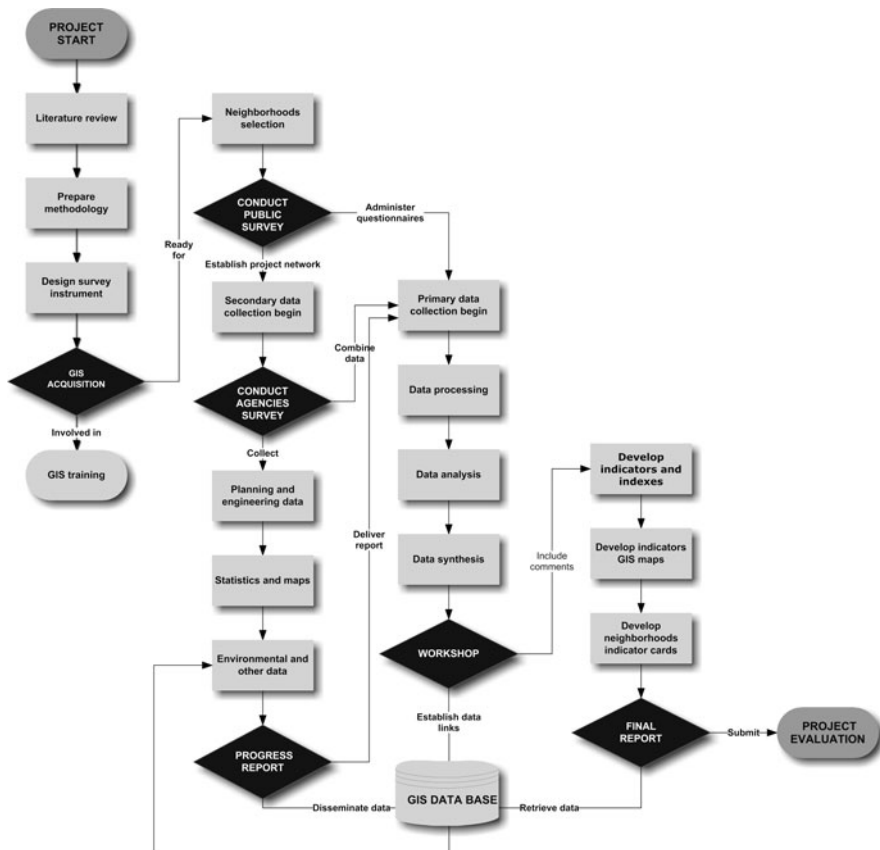
Fig. 11.3 The NZZ SUDI research project life cycle. Source: Credits for graphic Cavric (2009)

(2) develop indicators that can be comparable and applicable to other Croatian cities; (3) present all results in easily understandable graphical, textual, and tabulated form; (4) have accessible indicators that can speak for all interested parties (public, government officials, scientists, and individuals; (5) design a reasonable number of indicators which can be reviewed and compared on annual basis; (6) secure that different spheres of urban life could be measured and compared via different type of indicators; (7) cluster indicators within main urban problems groups and priorities in order to find the best solutions for tackling problems and critical situations.

These are actually key elements of using a system as suggested by the NZZ project. This type of system, in comparison to the existing one, does not put a limit on data and information availability. Rather, it serves as a source from which information of urban type can be obtained. It also incorporates data sets from all interested parties citizens, experts, councils, nongovernmental organizations, societies, investors, etc. It is also in tune with the National Spatial Data Infrastructure

(NSDI) initiatives. The NSDI supports GIS application where there are no spatial data redundancies and where the reduction of spatial data cost is inevitable. Automatically this means great savings and much more efficiency in urban systems operation. However, in order to implement the suggested SUDI model it will become necessary to empower professional capacities of city services in Zadar.

The City of Zadar Development Profile

Geographical and Transportation Linkages

The city of Zadar is the largest and major urban settlement of Zadar County (Zadarska Županija) which encompasses the wider region of northern Dalmatia. The city is at the center of a large countryside, the fringe of which is between 20 and 30 km from Zadar's central peninsula. It is presented with plateau Bukovice and Ravni Kotari, topographically is bordered by the slopes of the Velebit Mountain on the north and the Adriatic Sea on the south (Map 11.1). The town is at 25 km distance from the Velebit Mountain which forms a magnificent backdrop to the Adriatic Sea reaching altitude of approximately 1,300 m above the sea level. Besides the prominent mountain landmark, a special feature of the wider region is the Zadar
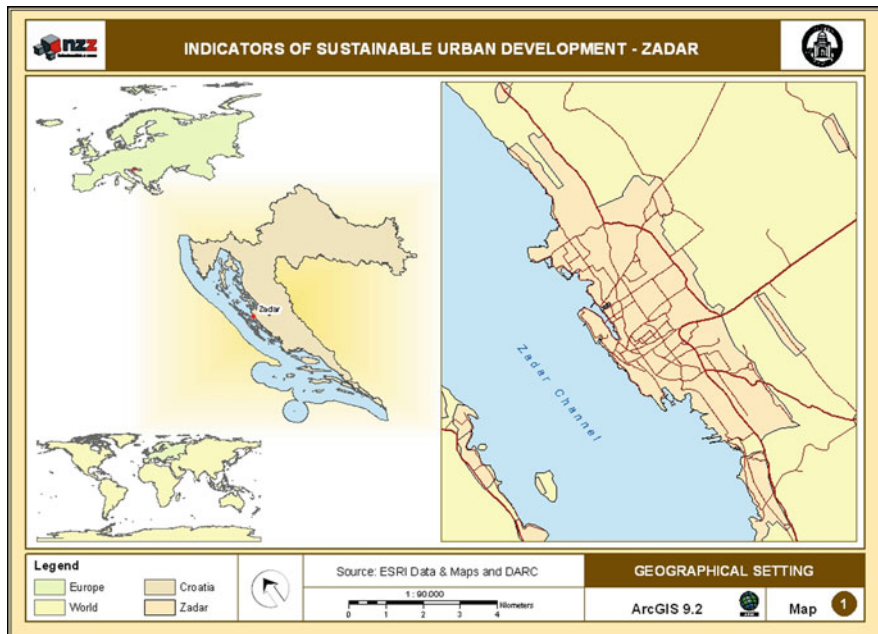
Map 11.1 Geographical setting of the City of Zadar Source: NZZ project GIS database for Zadar (Siljeg, Cavric, Toplek 2009)

archipelago with over 200 islands, islets, and cliffs. Moreover, in an hour-long car or boat ride it is possible to visit no fewer than five national parks, where one will find lakes, waterfalls, mountain scenery, and secluded wilderness areas (Crevar, 2008).

The geographical location of Zadar has always represented an important development opportunity, allowing the city to change in synchronicity with historical, economical, and administrative conditions. The city has direct access to the seashore. In addition its spacious rural hinterland, fertile soil, favorable climate, and enough room for controlled urban expansion are comparative advantages unlike other cities of the Croatian coast whose prospects for further urban growth are physically limited. Further, the city has been active in increasing roadway capacity by way of a recently constructed motorway (A1) requiring only a 15-min travel from the town center to the motorway (at exit Zadar II). Consequently, the traffic situation, through reduced congestion and improved travel flow and rate of travel, is markedly enhanced securing free-flow communication toward South Adriatic and the north of the country. The other transportation systems, especially sea and air, are also in the process of intensive diversification and modernization. Direct weekly connections by ferryboat to Ancona in Italy, as well as increased flights with foreign carriers like Ryanair, SkyEurope, and Germanwings give prospect for extending tourist season and for development of more integrated traffic system.

Historical and Cultural Cityscape

Zadar has a rich 2,700-year-old historical heritage which dates back to prehistoric times. Crevar (2008) describes Zadar (currently seeking heritage-site status for its historic center from UNESCO) as a combination of Split's ancient, blue-collar moxie and Dubrovnik's well-heeled, outdoor-museum aura. Like its Dalmatian cousins, Zadar is still most famous for an embarrassment of historical and architectural riches. The newly remodeled Archeological Museum has more than 100,000 pieces from the Paleolithic period to the eleventh century.

Investigation of various archeological sites has discovered, on the Arbanas site, settlements dated from as early as the Neolithic Period. There are, as well, numerous traces going back to pre-Illyrian, Illyrian, and Greek times. After the arrival of the Illyrian Liburns, one can note, for the first time in the toponomy of these regions the names *Jadera* and *Jader*, the Dalmation forms of what would become Zadar. In further historical developments, especially interesting are the artifacts from Roman times when Zadar was an autonomous Roman municipality. The characteristic geometry of Roman town-planning regulations and the remains of numerous structural artifacts are visible almost everywhere in central parts of the city and especially on the peninsula where there is a concentrated historical nucleus of the city. After the fall of the Roman Empire there were turbulent times when nature, disease, and man influenced developmental changes, and the sociodemographical, economical, and physical aspects of the city. The city was destroyed and rebuilt several times after being subjected to plunder and various forms of exploitation from Byzantium, the Crusaders, Venice, the Ottomans, Austro-Hungary, and Italy. After World War II the city was annexed to Croatia inside former Yugoslavia. The war

conflicts of 1991–1995 threatened destruction of the city by shelling. However, the end of the war saw the disintegration of Yugoslavia and it remained a part of the newly formed Croatia.

But Zadar is not just history and stones. A small city, it has a reputation for being cultural and vibrant. Each year, and not only during tourist season, it hosts numerous arts, sporting, and cultural events. Its major attractions and landmarks speak of a mix of old and contemporary treasures which appeal to admirers of all ages. For instance the "Sea Organ" – combination art, musical architecture, and science project – on Zadar's northwestern point, won the 2006 European Prize for Urban Public Space. Under stone steps, which disappear into the water, 35 pipes continually blow the notes of an unpredictable concert based on the sea's undulations and the ensuing air pressure. Last year, the point welcomed another innovative piece of permanent art: "Greeting to the Sun," in which a representation of the solar system is futuristically illuminated by photovoltaic cells inlaid into and stretched out along the promenade. Both installations sit below ground level, seamless with their surroundings. The architect of these two master pieces (Photos 11.1 and 11.2), Nikola Bašić, points out that "is like a palimpsest – an old parchment with old inscriptions being erased and new ones inscribed." "But the old ones are always perceivable," he added. "Even where it is invisible, like in the palimpsest metaphor, we know it had existed." (Crevar, 2008).

Photo 11.1 Greeting to the Sun (photo source Cavric 2009)

Photo 11.2 Sea organ (photo source Cavric 2009)

The City Rank and Population

By the European standards for city ranking (ESPON 2006), Zadar belongs to a group of smaller regional centers. It is estimated that in the area demarcated by master plan boundaries 80,000 people live today. If we add inhabitants residing in 15 gravitating settlements of the Zadar mini-metropolitan area, that number is over 100,000. As a consequence of natural conditions and historical events, the demographic picture of Zadar has been changing in number and composition. Economic transition and increased population have triggered demographic expansion and increased population. In addition, one consequence of the 1990s war was a change of ethnic structure. Although, economic boost and immigration were pivotal in restoring population pattern, there was also an enhancement of natural demographics as is evident in average family size and age pyramid. The authorities have put much effort into reversing population loss (only 6,000 inhabitants remained in Zadar during the 1991–1995 war crisis) and the number of residents has increased significantly over the past 10 years. Some of these new residents found Zadar an ideal destination for permanent settlement and a new beginning. New residential developments mushrooming in almost all of the 21 Zadar's neighborhoods will ensure that population growth continues.

Economic Development and Employment Status

The economy of Zadar city has been a part of a wider transitional process for almost 15 years. This is apparent in other parts of Croatia and the neighboring Western Balkan countries. Change in land use has already taken place. As such, the typical socialist urban arrangement of interspersing military barracks and industry with residential areas is not being implemented. Despite this, there are still several very attractive locations in the city occupied by industry. Economic rejuvenation was announced with high aspirations. However, the introduction of foreign capital and the change in ownerships and management structures have only partially induced economic diversification, greater productivity, and financial performance. Some sectors such as transportation and road construction have enabled a relatively fast recovery after war losses. Construction of the A1 highway with its direct link to Zadar's industrial harbor of Gaženica proves the point. Should Gaženica transform its current old/new industrial-business mix into a "state of the art" waterfront then there would exist one of the shortest transportation routes between Italy and central Europe. It would also be an additional impetus for economic prosperity of the city and its surroundings.

From a review of employment structures according to the types of occupations within the active working force it is evident that Zadar has a firm foundation. More than two-thirds of the city's working cohort is employed in the four areas of tourism and the retail trade, business services, community services, and education. This reflects Zadar's role in this part of Dalmatia. It has a large retail sector; it is the center of high education and special niche-market tourism focusing on cultural and natural heritage. The city residents are highly educated with approximately one-third of the active adult population holding tertiary qualifications from one of the oldest universities in Europe and working as engineers, professionals, and scientists. Unfortunately the level of education is not reflected in high incomes because the average salary bracket is between US$800–1,000.

Housing

Residential boom represents one of the distinctive transitional features in Croatia, primarily in the capital, Zagreb, and in most of the coastal cities. Almost the entire housing stock in Zadar is in private ownership. For example, 94.8% of apartments in Zadar are privately owned. This type of change is caused by the political and socioeconomic circumstances that have occurred in the post-socialist city. Average apartment size has grown from a typical 40–50 m^2 to 77 m^2 per apartment reflected in different structural configurations and additional rooms. This shows that purchasing power has increased and standard of living improved and that the taste and preferences of citizens have altered. Of course, increased purchasing power and improved discernment are not exclusive to local residents. Many tourists who come recognize well-appointed living conditions while staying on the Adriatic.

The private building sector has become increasingly involved not only in apartment construction but also in financing and providing developable and serviced land. It was not always easy for city authorities and the construction industry to make the

same provision. Each square meter of residential space in newly erected buildings is in the rather expensive range of from 1.700 to 2,200 EUR/m^2 (US$2,500–3,200) relative to the statistically registered wages of potential buyers. However, it should be noted that regular wages are not a realistic referent measure of households' and individuals' gross incomes since there is a gray economy in operation. This was confirmed by the data from the survey, where interviewees pointed out extra earnings realized outside of a regular work place.

It is difficult to estimate buyers' accessibility to real estate properties which are currently on the market. Economic analysis confirms that apartment market prices are fabricated and are several times the construction costs which vary between 400 and 700 EUR/m^2 (US$600–1,000). While in the developed western world the real estate profit rate ranges between 12 and 26%, in Croatia the percentage runs in hundreds. The global economic crisis has already shown that it is unrealistic to expect a continuation of this residential boom with many irregular categories and participants. In addition to that mention must be made that in future EU citizens will be allowed to buy property. How this will affect the real estate market remains unclear. It will be imperative to suppress uncontrolled buying and protect the residential rights of disadvantaged social groups.

Urban Infrastructure

Unfortunately, urban infrastructure expansion is not synchronized with residential and other programs for spatial development. There still exists a chronic need for provision of serviced and developable land; hence there is a huge time gap between finishing a building and its connection to the line infrastructure. This problem represents an oversight by the City Council service departments, which are quite often under pressure to issue planning and building permits. Without previous infrastructure preparation of land in line with adopted urban plans and technical documentation, it is not possible to start construction of residential and other buildings. Furthermore, it is hard to find a piece of land with legal ownership status, available access road, and serviced with all required infrastructure before actual construction starts. This is a typical example of the absence of integrated and synchronized planning and modern techniques for plan implementation.

City Transport

The existing city transport situation is chaotic dominated as it is by private car usage. Indeed, personal vehicles have completely changed the life and habits of the citizens of Zadar. The car has become a status symbol and has acquired the role of a metal puppet, a situation that would not have been possible under the previous economic system. Even in the face of negative precedents established in more developed countries, the number of personal vehicles is growing. In Zadar's center it is almost impossible to commute or park without being exposed to pollution, noise, loss of time, stress, and other accompanying phenomena. Building integrated

public transport systems and the applications of traffic-easing measures, especially in pedestrian zones, present the only ways forward. Unfortunately these options are incompatible with the newly developed shoppers' mentalities. Solutions and recommendations from numerous transport studies can relatively easily be consulted and applied in Zadar. Such an application should not be difficult if the authorities are willing to privilege public, pedestrian, cycling, and nautical transportation. This should be the guiding principle particularly if we consider the major specifics of Mediterranean urban setting where streets, plazas, and pedestrian promenades represent a foundation of social, functional, and physical morphology. Since the city topography is not a constraining factor, and a large number of developments are connected to tourism, developing and advancing cycle infrastructure would be a huge step forward, not only in terms of traffic and for the tourist but also in an ecological sense.

Urban Planning

The planning concept promoted in the new Croatia was founded on a model in which planning institutions needed to function on national, regional/sub-regional, and local levels (Budic and Cavric 2006). Although the model was created to answer new political challenges, it did not succeed. Its structure is still based on the "top–down" approach, despite the growing number of participants in the urban arena. Such a model does not support the complex, multidisciplinary work of experts trained in urban and regional planning studies, because those disciplines do not even exist in the current educational system of the Republic of Croatia. This influenced the preparation of the latest generation of plans in which there is hardly anything from modern planning principles. Inadequacy of serious expert analyses, GIS processing with complex spatial data, development of alternative scenarios with the assistance of planning support systems and "what if" scrutiny, application of diverse implementation techniques, intensive public participation, and many more are only a small fraction of the obstacles facing existing planning. Unfortunately, the master plan of the City of Zadar portrays the same syndrome of "inability" to solve problems concerning sustainable planning as an imperative of modern practice. Its application and adaptation is more part of a formal than of a precise character, with the goal being to satisfy political- administrative demands and to create a foundation for executing the interests of influential individuals and groups.

Land Use

The phase in which Zadar is at the moment is defined as a post-socialist transition. In other words, it is the beginning of a post-modernization whose goal is to ensure the harmonious connection of all city parts into a functional whole. Such a process needs to implement sustainable development in the context of a free-market urban economy. As such, it is to be expected that the existing city image as a combination of "historical and modern" will require implementing development projects which will demand massive state and private investments. Such a situation

will demand a higher level of intervention, coordination, and development control. These projects will definitely affect future urban form and method of land use which have significantly changed since 1980.

At the moment, the real estate market as well as government intervention determine city development and urbanization. Some interventions were activated within city zones on the location of abandoned former industries and former military barracks. Unused land space throughout the city presents a good opportunity for optimal usage in those areas where they are situated. However, there is no materialization of optimal sustainability and avoiding of imbalance, including illegal construction building which was evident during 1980s and 1990s when the majority of today's residential capacities were developed. In a number of locations there is still an ongoing action of their incorporation and merger with more recent developments. In that context it is not easy to fully evaluate these structures and sites with particular focus on achieving optimal density and compatibility with public services buildings. In other words, numerous investors and lobbyists have managed to redevelop and reconstruct many parts of the city into new residential areas without taking into consideration adjacent infrastructure and social services. Similar practice has been applied in shopping center developments where numerous shopping outlets have appropriated the most attractive city locations in a leap frog fashion, especially along the main road corridors, urban outskirts, and fringe zones. They have also fueled further urban sprawl, spatial, and socioeconomical transformation of peripheral urban villages.

Unfortunately, even with the employment of more systematic approaches, it is obvious that existence of numerous disconnected pieces of city land presents the ideal testing ground for the speculative and monopolistic practices of privileged construction companies possibly linked to the various political alliances. At the same time, rigidity and the overlapping of planning and other services, as well as the huge number of unprofessionally prepared detailed layout plans, combined with insufficient participation of essential stakeholders present obstacles to a number of urban change actors. Furthermore, various determinants of profit patterns and the current socioeconomic milieu of the new Croatian society have started to create differences. This has given rise to forms of segregation and the impoverishment of city inhabitants as evident from the field survey discussed in the following pages.

Research Findings and Discussion

From the above, it is obvious that during the last decade Zadar has gone through changes caused by economic and sociopolitical transition. Unfortunately, from the point of view of sustainable planning these alterations have not been reflected in the process of preparing various sorts of spatial plans. For that reason, the question of future challenges and sustainable developments possibilities remains open. In the plan preparation process application of sustainable development principles were omitted. Suggestions about land use changes in new and already established city zones show a high level of lack of coordination among authorities

and diverse stakeholders. A synergetic approach to assessment and utilization of overall city capital was absent. Similar to that situation is absence of democratic dialogue between planners, citizens, and their groups and associations. For that reason there is still an array of unanswered questions, dilemmas, and challenges which will surely induce Zadar's sustainable future. Findings of the NZZ project and the growing literature about transitional cities of East and Central Europe (Cavrić & Nedović-Budić, 2007, Tsenkova, 2003, Hamilton, Pichler-Milanović and Kaliopa-Dimitrovska 2007, Stanilov, 2007, Hirt, 2008) imply that without incorporated information and technology models in modern planning, ensuring decision relevance and influence on sustainable urban development will not be possible.

Indicators data for the purpose of the NZZ project was collected, analyzed, and presented to show how, in a city, sustainable development practice responds to requirements of different city dwellers. Indicators designed for the city of Zadar are presented with the assistance of written, numeral, and graphical information in two basic ways. First, collected data from the population in 21 local communities are given in a series of GIS maps directly generated from SUDI GIS database. Second, indicators resulting from analysis of experts focusing on "challenges and opportunities" are reviewed in a series of tables. In this way public and professional transparency is achieved and an intelligible and open SUDI model is proposed. In continuation, an evaluation of basic groups of indicators illustrated with selective graphical supplements is given.

Natural Environment

Basic variable (quality of natural environment) was measured on the basis of indicators of air quality, quality of the fresh and sea water, soil quality, noise impact from traffic and other sources, noise, green areas coverage, and human impact on natural and built environment change. Interviewees were mostly critical of noise level, and most satisfied with air and sea water quality. Their opinions differ from neighborhood to neighborhood, depending on higher concentration of traffic and higher population density. People living closer to the sea shore are concerned with the sea water quality more than those leaving in inner-city parts. Some of the interviewees pointed out soil endangerment and problems with green areas and open spaces which have gradually replaced built-up zones. Soil quality as one of the sub-indicators in this set is chosen as an illustration (Map 11.2).

Citizens also stressed the urgency of solving controversial locations and brown files as dumping sites, ruins, abandoned industrial complexes, etc. This research also discovered a few citizens who did not notice almost anything about their immediate surroundings and did not care about possible consequences. However, this number of ecologically indifferent interviewees was relatively small. Overall pollution and environmental impact were not treated as alarming. For that reason, the results showed that more than a half of the interviewees regard their city environment as healthy and clean compared to other coastal cities.
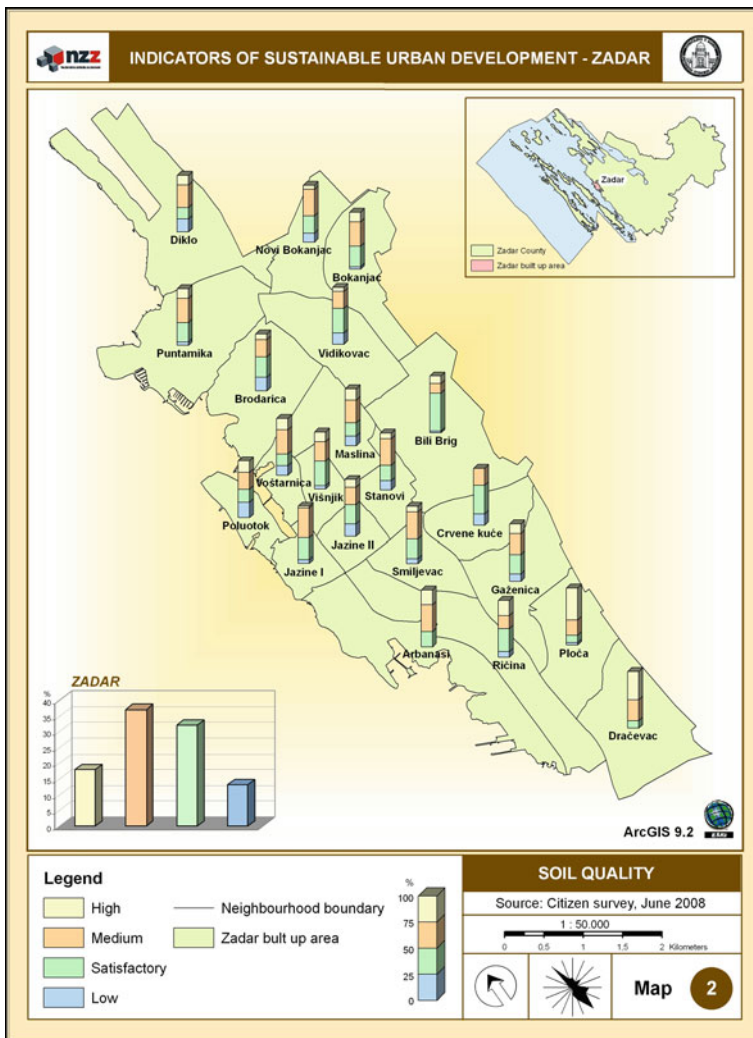
Map 11.2 Soil qualities to be placed here Source: NZZ project GIS data base for Zadar (Šiljeg, Cavrić, Toplek 2009)

The research was also aimed at establishing the level of risk from different natural hazards, requiring the interviewees to estimate the possibility of a natural disaster. Their reflections were almost all the same in all local communities because the majority of them think that that kind of possibility is very small or even does not exist, although at the time of the research there was an episode of a tidal wave. Still, should there be some natural disaster, most of them were afraid of fire and earthquake. Inhabitants who live by the sea are in most cases scared of storm, tidal waves, and rising sea level, while inhabitants on the outskirts of the city are in

most cases terrified of possible fire because of a greater forestry land cover on these locations. All these mentioned threats are perceived as potential dangers, but not at a significant level and volume. Questions about natural disasters were aimed at getting information on the existence of early warning systems. The results are almost even in all local communities where it was revealed that such a system does not exist. That confirmed the observation that assumptions about potential risks do not exist only among citizens but also among local government officials and people's representatives.

When the answers were grouped, it was possible to read a general situation about how land use and land cover, positively or negatively, affects natural environment quality. In that context interviewees were asked to express themselves regarding level of effect (high, medium, low, without influence) of different land use categories derived from the current city master plan. A majority considers that tourism and real estate related businesses endanger the quality of life in local communities, and for that reason they suggest sustainability improvements in those major sectors. Table 11.4 outlines the evaluation summary of challenges and possibilities of their solving for natural environment complex.

The table summary was also improved by findings from technical and planning documentation, as well as by the newest reporting from the National Agency for Environment (AZO, 2006). All these results show a necessity for preserving Zadar's position within Mediterranean biodiversification and cultural-anthropological system. The natural landscape with its wide agricultural hinterland on one side, and facing the sea and islands on the other side present significantly comparative advantages for Zadar. This advantage on the basis of the results of the NZZ

Table 11.4 The natural environment challenges and opportunities

| Natural environment	Challenges			Opportunities		
	Low	Med	High	Low	Med	High
Protection of natural resources and environmental assets			–		–	
Urban heat island developments and climate change effects		–			–	
Air pollution			–		–	
Noise pollution		–			–	
Sea and fresh-water pollution	–				–	
Impact on soils and vegetation			–	–		
Water management	–					–
Solid waste collection and management			–	–		
Reduction of green areas and open spaces			–		–	
Loss of biodiversity			–		–	
Potential natural hazard impact		–			–	
Potential human hazard impact		–			–	

Source: NZZ project expert base (Cavrić, 2009).

project can still be maintained by way of applying modern methods and measures to integrate protection for air, water, and soil quality from natural and man-made risks.

Built Environment

The built environment phenomenon and the structure of residential developments brought firm opinions and perspectives among interviewees. Showing a diversity in opinion about the built environment, more than one-third of them think that the space is overbuilt, while two-thirds think that it is medium built. The number of those who think that there are not enough built-up spaces is insignificant. Depending on the surrounding landscapes, the builder's mentality and culture, and financial possibilities, citizens prefer a residential environment dominated by low- and medium-rise buildings, particularly detached family houses on individual plots. Interviewees are additionally concerned about illegal construction as an acute social problem in almost all coastal cities (Leburić, Maroević, & Šuljug, 2005). The level of equipment with urban services is graded with high, medium, satisfactory, and low grade. Results show general dissatisfaction of citizens with social services buildings and adjacent infrastructure. Young people, especially, point out the inadequacy of sport, entertainment and leisure facilities. Older age groups note lack of buildings for culture, health, and education and children's playgrounds. The eldest, meanwhile, are worried about the lack of retirement homes, access roads, and ramps for the handicapped and people with disabilities.

An attempt was made to establish a priority list of facilities considered as the most needed in all 21 local communities. This list summarizes the needs in the following order: (1) health (2) tourism (3) child care (4) culture (5) entertainment and leisure. The level of equipment and quality of infrastructure systems services were graded at the same scale (high, medium, satisfactory, and low). The biggest frustration was with garbage collection and on the priority list of infrastructure factors the order was as follows: (1) water drainage (2) parking bays (3) reserved cycling lanes (4) pedestrian trails (5) public lighting. This empirically confirmed that these problems need to be treated more adequately.

The results are also dispersed by the question of level of conservation and protection of cultural-built and historical heritage which included buildings, streets, squares, and archaeological excavations. The most preserved is the heritage in central parts of the city, while the number and grade of conserved areas decreased toward the suburbs. It is interesting that interviewees were especially critical of their own local communities and, specifically, their immediate, while they were less critical of the situation in other neighborhoods and the city at large. The most dominant building type is the mixed development as verified by more than 60% of interviewees. One set of interviewees claimed that buildings and spaces should be developed in the Mediterranean style in order to emphasize traditional images. Another set preferred contemporary architecture implying that changes are necessary in society and urbanism (Map 11.3).
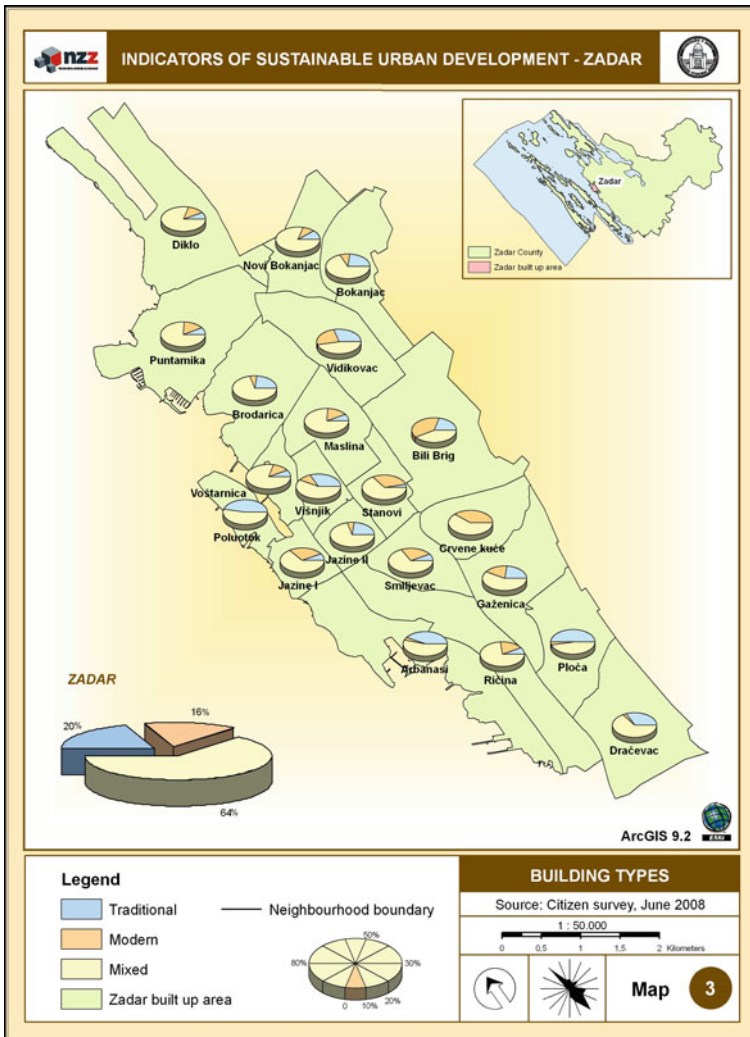
Map 11.3 Dominant building types to be placed here Source: NZZ project GIS data base for Zadar (Šiljeg, Cavrić, Toplek 2009)

The biggest disappointment for interviewees relates to the implementation of smart growth and effective urban management. Particularly criticized is the system of political decision making at both the city and local level. The majority of interviewees stressed that these new planning paradigms were not yet employed while the rest of them considered that there was partial application. Additionally they dislike unplanned urbanization and activities that lead to heavy coverage of shorelines with massive concrete layers. Most of them suggested the need for urgent action in stopping further development alienation. Many citizens claim that the current

building types do not fit into the Mediterranean sense of the place. They claim as the main reason for this situation the lack of expertise and ignorance by those who should be the front-runners for sustainable change (e.g., politicians, decision makers, architects, and planners).

Interviewees were also very sensitive toward a new fashion hit in construction, the so-called urban villas and apartments. These types of new city artifact present a platform for numerous conflicts among experts, political, and economical lobbyists, private investors, and ordinary citizens. These new architectural models elevated numerous social and ecological consequences at the most attractive city locations. Attitudes regarding their existence are divided. However, the judgment about number and symbolism of this type of development is exaggerated.

Besides these urban peculiarities, interviewees also directed attention to the gradual change of the cognitive map of the city where products characteristic of the developed western world are gradually moving in. The city image where life for centuries was focused on waterfront, beaches, streets, parks, and plazas, and where distances were always bridgeable, is gradually changing. The speed and dynamics which follow this are changing too, while there still remains the need to establish the price which needs to be paid. These and other challenges and opportunities are depicted in Table 11.5.

Economic Environment

Changes from the beginning of the 90s caused a chain reaction in the economic sphere, on a macro and micro level. For years suppressed prospect for private initiative and economic transparency finally has surfaced, marking the start of a game unprecedented in recent Croatian economic history. Historically, small-craft industry provided the economic base of the city. Since then, there has been a shift from the more traditional industries toward commercial business based on improved technologies and international and regional networks. Private initiative coupled with legislative changes and less political involvement (especially in the medium and small enterprises) contributed to faster economic growth and diversification. However, in that process, similar to other transitional countries, there emerged unavoidable structural, technological, and sometimes illegal challenges. Political, nepotistic, and even mafia-type cliques enable some individuals and groups to achieve favorable positions and monopoly within a geographically limited market. Only recently, as a result of acceptance of legal obligations in the process of complying with EU regulations some more positive shifts have occurred (Bosch, 2002).

Furthermore, change in the political system revealed the formerly invincible, socialist, industrial giants as being unable to overcome the obstacles of free enterprise. Many of them are closed, creating redundancies and sale of companies. Since buildings and technical equipments of these companies have significant land cover, land use, and environmental impact, the above transformation caused spatial and

Table 11.5 The Built environment challenges and opportunities

Built environment	Challenges			Opportunities		
	Low	Med	High	Low	Med	High
Recently approved spatial plan of the Zadar County		–			–	
Recently approved spatial and master plans of the city			–	–		
Segregation of land uses in urban periphery and inner city		–			–	
Lack of available buildable land on attractive locations		–			–	
Government control of land demand and supply			–		–	
Demand for developable and serviced urban land			–		–	
Development of MXD suburban malls		–				–
Development of corridor and strip retailing		–			–	
Mushrooming of informal street trading	–				–	
Development of upmarket luxury housing on selected sites			–		–	
Land use conversion in inner city and prestigious urban areas		–		–		
Housing and MXD developments in green suburban zones			–		–	
Renovation of deteriorated high-rise socialist state buildings			–		–	
Regeneration and renewal of old industrial districts			–			–
Development of new MXD business and office zones		–			–	
Regeneration of city center and public urban spaces			–		–	
Change of city symbolism, signage, and semiotics		–				–
Protection of historical, architectural, and cultural heritage		–			–	

Source: NZZ project expert base (Cavrić, 2009).

ecological implications (e.g., Industrial District of Gaženica). Meanwhile the global crisis emerged, although for years it was believed that it would not be possible in Croatia. In addition to that, it was understood that without renewing economic ties with the rest of the former federal state and liaising with markets of other countries, a successful economic recovery would be impossible. These and other findings are presented in a synthesized manner in Table 11.6.

Table 11.6 The economic environment challenges and opportunities

Economic environment	Challenges			Opportunities		
	Low	Med	High	Low	Med	High
Transition from industrial to service-oriented economy			–		–	–
Private sector growth of small- and medium-size enterprises			–			–
Internationalization of urban economy		–				–
Market integration and technology innovations		–				–
Foreign and international investments		–				–
Adjustment of industries and services		–				–
Presence of fiscal imbalances			–		–	
Lack of adequate local government finance mechanisms			–		–	
Lack of fiscal, tax, and revenue generating discipline		–			–	
Unsustainable expenditures			–		–	
Central government investments in local urban developments		–			–	
Labour market restructuring			–		–	
Unemployment rates fluctuations			–		–	
Higher unemployment of women			–		–	
Discrepancies between national and city GDPs		–		–		
Emergence of gray economy in building industry sector			–		–	
Lack of retail and employment opportunities in residential areas		–		–		
Lack of affordable financial instruments for urban development			–		–	
Emergence and diversification of real estate property markets			–			
Investments in high return sectors (banking, real estate, tourism)			–			–
Diversification of land values			–		–	
Growth of informal trades and development of survival strategies		–				–

Source: NZZ project expert base (Cavrić, 2009).

Taking into consideration the sensibility of questions regarding the economic situation, interviewees responded with a certain level of caution, especially regarding questions about monthly wages and incomes. In May 2008, when the survey was administered, almost 60% of the population had monthly salaries ranging from
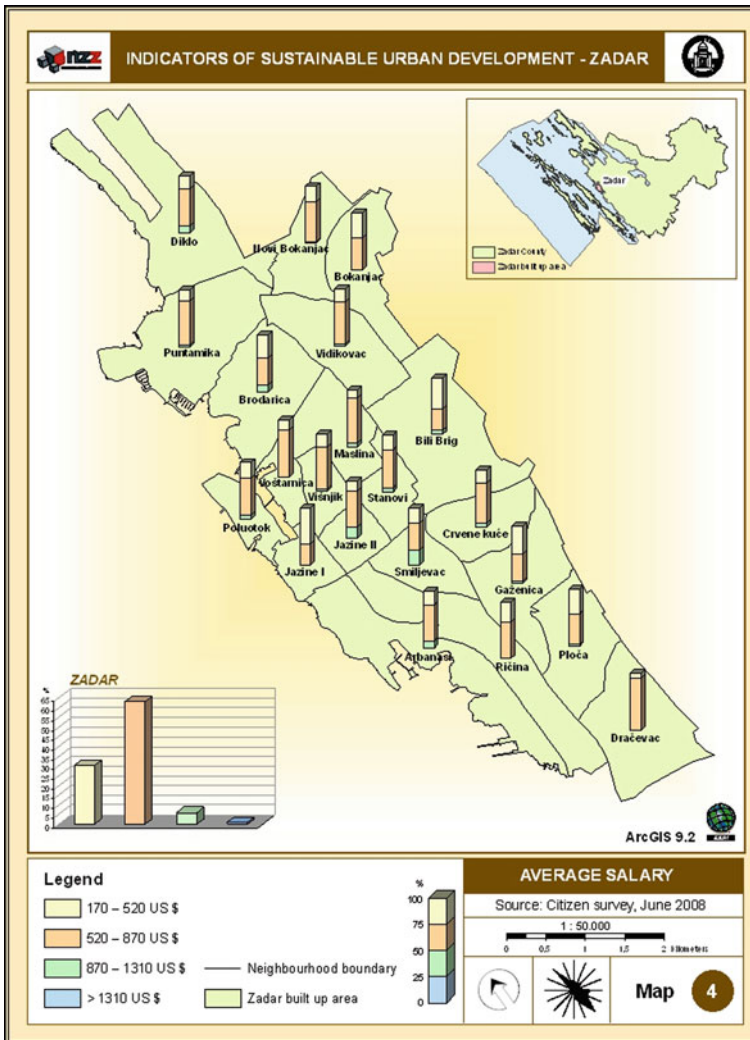
Map 11.4 Average salaries Source: NZZ project GIS data base for Zadar (Šiljeg, Cavrić, Toplek 2009)

US$600–1,000. A very small fraction (0.5–1.0%) of interviewees had salary from US$2,000–3,000. The majority of salaries are within the national average, so interviewees estimate that they live similarly to the rest of the population in the Republic of Croatia. However, almost 40% of them (largely from the middle class) think that they should have higher salaries in order to satisfy their family needs.

Personal perception of, and satisfaction with, mixed commercial-retail and business outlets differ due to the fact that 45% of interviewees are sympathetic, 20% of them are not, while 35% is partially supportive. Proximity to living and working place as a reference of the quality of life for 71% of interviewees was considered

satisfactory with only 6% expressing dissatisfaction. For the additional 23% of surveyed sample, the answer was "I don't know." These interviewees belong to a young age group comprising students and pupils.

The question about the location of companies within neighborhoods revealed completely different statistics. More than one-third of them claim that the number of companies located in their communities is greater than 10. A similar share is registered from those who assume that there are only 1–3 companies in their neighborhoods, while 15% of them think that there are between 5 and 10 companies, and 20% think that there are 3–5 companies. Interviewees reveal they support the opening of new companies. This is commendable because economic sustainability supports the idea of residence-to-work proximity.

At the same time it was discovered that there is an opposition to incompatible land uses in their areas, so-called NIMBY (not in my back yard). In addition almost half the interviewees agreed that companies located in their territories do not participate in social welfare programs. They do not aid local events or the work of local administration, and they do not invest enough in planning and environmental campaigns. In contrast, the other half of those interviewed think that companies make a positive impact on the general economic, social, and spatial development of the local community. Interviewees suggested that owners of companies should be in constant contact with members of local boards, as well with the population of the local community. They strongly believe that a company's management should share responsibility and participate in local actions where different social, environmental, technical, communal, and similar issues should be tackled. Opinions are divided on what activities can contribute faster to the economic welfare of the local community. The biggest exceptions are in the old-age group, where pensioners and semi-retired people consider that return to primary activities would be the best for improvement of local economy. Other age cohorts consider that for the fastest development they would need the help of service industries.

Social Environment

During and in the aftermath of war, the majority of people was struggling, trying to cope with daily life, using different survival strategies. The most common can be described as "cope by yourself, grab as soon as you can and the more you can." This actually contributed to fast capital accumulation and overnight enrichment, a phenomenon described as "wild capitalism" by some authors (Cavrić & Nedović-Budić, 2007, Vujović and Petrović, 2007). However, such circumstances empowered only a few, while the majority had to continue with diverse rescue solutions. This process quite often had political support. In addition, the atmosphere created during and in the aftermath of the war made it favorable for shady deals. Soon after the war, some of these shady deal brokers and newborn tycoons became representatives of the new elite, and some were removed from the stage ending in bankruptcy overnight. The post-war atmosphere also assisted the legal framework with many loopholes, which is today in the process of major surgery because of Croatia's commitments toward EU.

Interviewees highlighted the view that the newly created social environment is consequent on political and economic changes. Different possibilities in approaching the political and financial back-up were the main indicators which show diversification of the social matrix before and now. In the former system this approach was based on a developed lending system and social subventions in the residential, health, social welfare, and education sectors. In most cases credits had built-in mechanisms allowing for readjustments to counter difficulties with regular repayments. The middle class proved to be the dominant beneficiaries while the number of poor was kept within economically acceptable limits. Today the situation is quite different because many instruments of social subsidy have been abolished. Consequently, the middle class has diminished and the poorer class has increased.

The majority of interviewees agreed that the quality of life has significantly dropped, and that access to better-quality services and products are available to only a small proportion of the population compared to the time of socialism. In particular, the life of vulnerable and disadvantaged groups is worsening (e.g., young, unemployed, retired people, war invalids, refugees). Living standards which earlier were measured by ownership of private apartments, weekend cottages, and cars produced by local industry (e.g., ZASTAVA) have plunged. The situation today is characterized by an increase in imported private cars which, for their owners, are status symbols. However, the number of favorable housing loans which had been rising steadily all these years shows a sharp decline today. Most commercial banks are becoming more restrictive imposing additional requirements for new applicants due to the fact that many of the current loan beneficiaries are unable to meet regular monthly repayments. An increased number of repossession cases speaks of the decline of property market. This is similar to the expert findings of the NZZ team which show a whole mosaic of socially related issues (Table 11.7).

Among the many researched social indicators this part briefly focused on the social reasons local community residents select place of living, followed by social integration, and satisfaction with social services. Most interviewees revealed that closeness to family, friends, neighbors, and people of a similar social status were not important for moving in a certain local community. Consequently, social diversity and interpersonal relationship with neighbors are mid-level as shown in Map 11.5.

Among inhabitants of some neighborhoods intolerance is visible, expressed in terms of bad opinions or through negative experience in the past. However, most of them did not give exact answers for assigning certain characteristics to some neighbors. Regarding the integration of special social groups, results differ between categories of children and adolescents, women and single mothers, older people and retired people, people with social welfare, refugees, etc. Results were, however, often the same for the category of addicts (52%) and homosexuals (71%) where their inclusion is not supported. These answers are evidence of the conservative nature of the interviewed majority.

There are differences between level of satisfaction with social contacts, gatherings, and activities throughout local boards. Citizens often gather in cafes (20%), rarely in libraries and museums (0.5%). Places of gatherings are assessed on a high, medium, and low criterion, and with the grade of negative behavior through local

Table 11.7 The social environment and its challenges and opportunities

	Challenges			Opportunities		
Social environment	Low	Med	High	Low	Med	High
Social polarization and marginalization			–			–
Emergence of new elites and tycoons			–		–	
Conflict between local and foreign entrepreneurs' interests		–				–
Rapid privatizations of residential properties			–		–	
Existence of homogenized social urban groups		–				–
Growth of urban poor		–			–	
Inequality problems		–			–	
Limited access to urban finances and services by majority	–			–		
Vulnerability of some urban social groups		–			–	
Population aging		–			–	
Ethnic tensions and intolerance		–			–	
Growth of urban crime, violence, and insecurity		–			–	
Corruption, profiteering, and illegal construction			–		–	
Existence of neoliberal and nationalistic stereotypes			–		–	
Problem of war refugees and veterans		–			–	
Accelerated urban vs. rural development in countryside			–	–		
Inadequate political representations			–		–	
Citizens involvement in urban development process			–	–		
Presence of "comprador," "buddy," or "brotherhood" capitalism			–		–	
Development of NGOs and "bottom-up" social movements		–			–	
Globalization and exchange of cultural values		–			–	
Abundance of subsidized urban (social) services			–	–		
Changes in workplace-community relationships			–		–	
Absence of strong neighbourliness		–		–		
Disappearance of socialist middle class		–			–	
Emergence of consumer-oriented society			–		–	

Source: NZZ project expert base (Cavrić, 2009).
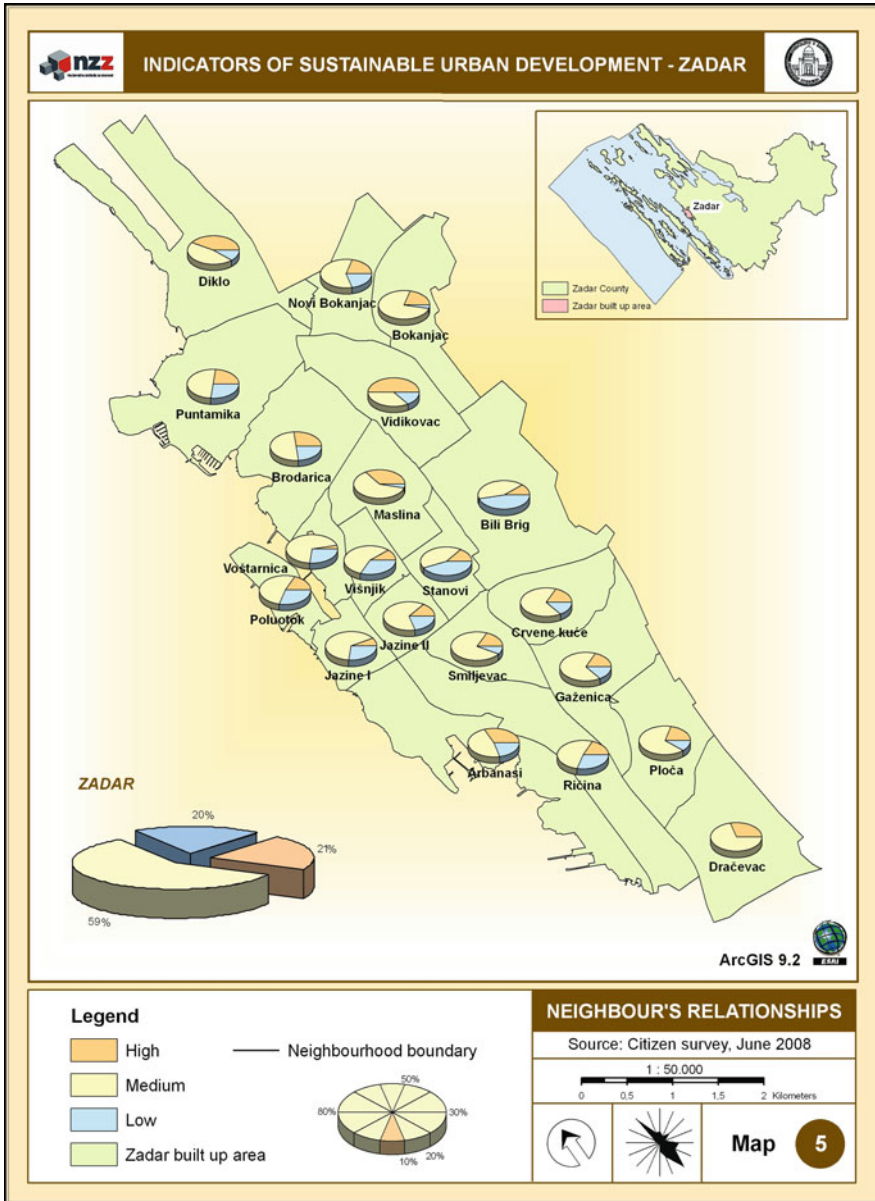
Map 11.5 Neighbors' relationship Source: NZZ project GIS data base for Zadar (Šiljeg, Cavrić, Toplek 2009)

communities. Interviewees answered about their positive behaviors and their grade. Most often they mentioned aspects of behavioral culture such as kindness, diligence, helpfulness, friendship, and neighborliness. Furthermore, they described some of

their neighbors as proud and influential, others as economically powerful but stingy, some as hardworking, polite, and cultural.

The importance of a social context is confirmed through questions about free time. The majority of interviewees (65%) stay within the local community area. Some often spend time in natural settings (19%) or on the riva (waterfront promenade –19%), and in cafes (20%). Most often answers were that they spend their free time with family members and friends.

Political Environment

The fact that they can freely express their opinions about their city and its political and administrative structures caught the attention of interviewed citizens. Seeing that Croatian society is highly politicized, interviewees gladly gave opinions about the political establishment and its influence on planning and development of their city. The majority of them agreed that regardless of the system and political affiliation the ambition of local government officials was always to achieve their individual and group benefits first. Priority in protection of the public interest is clearly substituted with aspiration of fulfilling private interest, as well as the interests of the Croatian Democratic Union (HDZ), the party which for the past 15 years has been almost independently present on the city's political scene. The main opposition, the Socialist Democratic Party (SDP), and other smaller parties play a minor role and their rating changes depending on the support they offer to the main party.

Interviewees, however, understood that the present city administration (dominated by a single party) is restricted by limited finances, but even more so by lack of professional expertise in modern urban planning and management. That could easily be proved by a simple analysis of the professional qualifications of employees in the planning sector where there are no officers who had studied planning or urban governance and management. Most of the decisions are taken in a simplified and voluntary manner, and this is behind numerous unfinished city projects. It is obvious that existing city administration, its management, and employees do not have shortage of time, but it is obvious that they have problems with the modern planning profession and its demands where a planner should play multifunctional and multitasking roles. Only with necessary modernization and continuation of education can the present management fulfill its main role, which is to serve the city and its citizens. The aim of Table 11.8 is to summarize numerous political challenges and opportunities currently shaping the city's political landscape.

The results of the analysis of indicators of political environment show a high level of discontent and distrust toward public institutions, government, and management. The majority of interviewees criticized the system of decision making regarding quality of life. When asked to spell out at least five joint programs in the area of spatial and environmental planning which resulted from the united action of citizens and neighborhood officials in the last 3 years, most interviewees did not know the answer. They explained that in fact citizens do not even participate in united decision making with local government, or that for the past few years there were

Table 11.8 The political environment and its challenges and opportunities

Political environment	Challenges			Opportunities		
	Low	Med	High	Low	Med	High
Political restructuring and privatization			–		–	
Restitution of old kinds of real estate			–		–	
Shift from centralized toward local management system		–			–	
Changes in comparison to Croatian capital Zagreb			–		–	
Growing fragmentation of governing responsibilities			–			–
Changes in functional city ranking		–			–	
City treatment as regional center		–				–
City treatment as county center		–				–
Adequacy of local government resource base		–				–
Local government responsibility for urban planning		–			–	
Local government responsibility for urban infrastructure			–		–	
Local government responsibility for urban services	–				–	
Compliance with EU local government regulations		–				–
Legalization of illegally constructed built-up areas		–			–	
City management efficiency		–			–	
City major influence			–		–	
Influence of political parties on city development policy			–		–	
Political stability		–			–	
Neoliberalism, nationalism, and protectionism			–		–	
Impact of foreign factors on city development policy		–				–
Development of city governance and professional cadre			–		–	
Relations among different urban actors			–		–	

Source: NZZ project expert base (Cavrić, 2009).

not any programs, or they possibly existed but interviewees were not aware of their presence. In any case, there exists unevenness in perception of spatial and environmental planning congruent with requirements of sustainable development. In reality there is an absolute absence of citizens' involvement in the scrutiny of planning projects. The possibility of participating in public discussions does not exist, and if it does the level is very low. The NZZ field survey team has examined citizens' opinions about preparation and implementation of spatial plans, environmental impact assessments, and different structural and infrastructure projects. Unfortunately, their

answers confirmed expert knowledge about this very common disease where the role of the public is extremely passive.

The NZZ research has also anticipated the need to answer on questions with regard to negative phenomena such as corruption and bribery, nepotism and rack-eteering. Almost three-quarters of the citizens confirm that such behaviors are very common in contraposition to the country's legal and social security systems. Interviewees have the opinion that personal interests of local people were above public interest. Because of that the question is in which interest are decisions regarding spatial planning and urban development made; in other words, who loses and who gains with these decisions. Interviewees think that in such processes state and local politicians, corrupt professionals, tycoons, and to some extent even individuals with criminal records are involved. They stress that major actors of change can be found among influential Croatian politicians and ministers who originate from Zadar and its surroundings, some experts, domestic and foreign investors, and religious groups. About one-third of citizens consider that those actors have high influence, while the remainder believed that their influence could be marked as medium or low but still existing.

Citizens were especially concerned about the bad practice of public insight where quite often plans and projects are presented too late, and this research agrees with this perspective. About a quarter of the citizens consider that local politicians and administration under the umbrella of the City Council still struggle to promote the EU standards of good governance. Also, a vast majority of those interviewed think that efficiency, working habits, and the speed of city administration could be described as unacceptable (Map 11.6).

Emphasized, also, are the complexity and inefficiency of the city government and administration. According to those interviewed, the lengthy administrative procedures influence efficiency of investments. Good examples of this situation are planning (location) and building permits which can be obtained only if the applicant is ready to provide some financial incentive (i.e., money under the table) or social and political connections. It is obvious that one of the challenges surrounds the issues of professional ethics which does not exist in education curricula.

Conclusions and Recommendations

Accurate and available urban indicators are recognized as the key in modern planning and management of cities. Within the domain of urban applications, the indicators help the cities establish practical objectives and priorities and take action toward securing the vitality of cities and their components at present and in the future (Ghosh, Vale, & Vale, 2006). In this respect the indicators enable the measuring of development in the direction of proclaimed visions for a better future, providing preconditions for the realization of affirmative changes. As Weclawowitcz (2005) argues in spite of the quickness of transition, the social and economic activity of urban dwellers will, for a long time yet, be carried out in a physical structure created for other economic and ideological objectives, in which the formation of a post-socialist city is still far from complete.
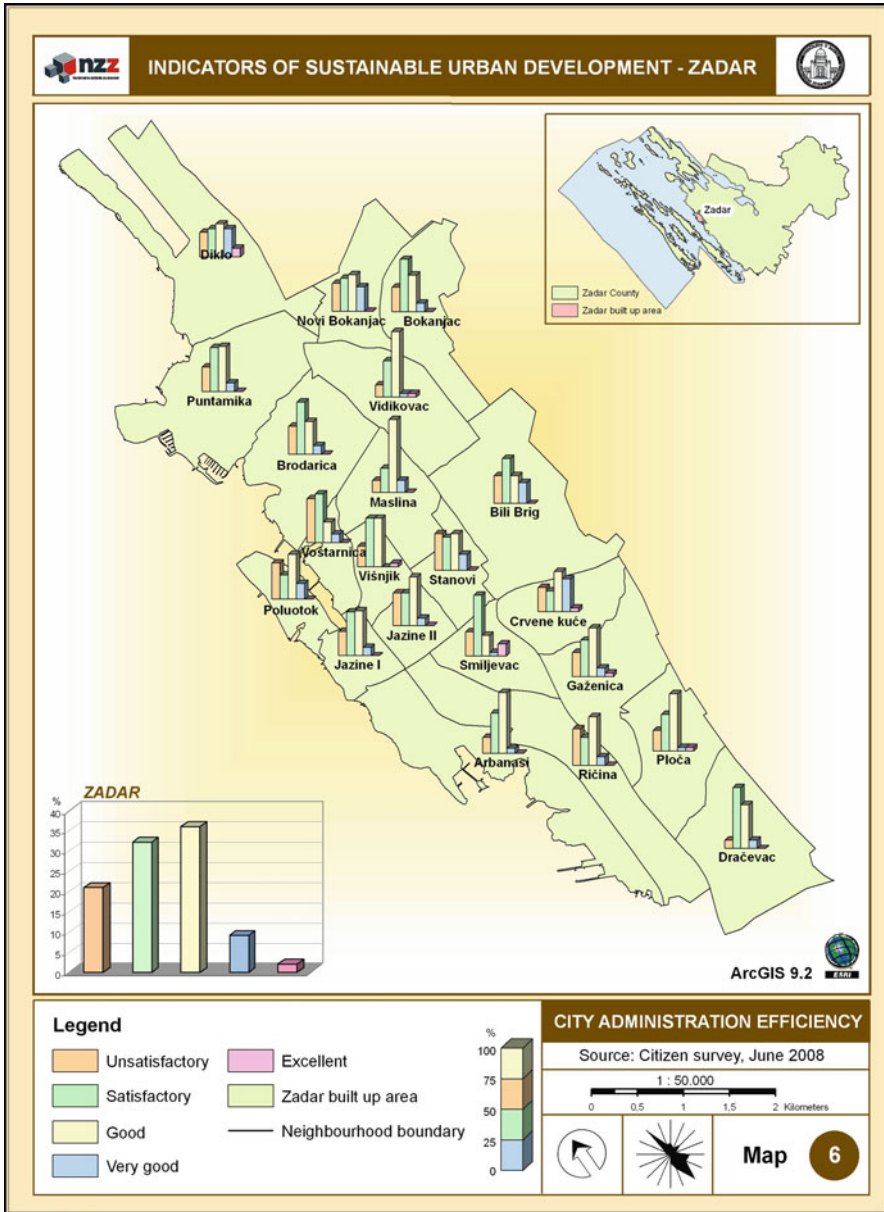
Map 11.6 City administration efficiency Source: NZZ project GIS data base for Zadar (Šiljeg, Cavrić, Toplek 2009)

In the context of future sustainable urban development of Zadar, the indicators present effective tools for monitoring urban development progress congruent to the formulated objectives. At the same time, they help take corrective measures

along the road under circumstances where a city evolves in an undesirable direction. Simultaneously, they indicate how far the fulfillment of proclaimed objectives is in respect of the present stage of the city's development, as well as what the aberrations from the planned course are. Should there be any initiatives for preventive action, the indicators of sustainable urban development may contribute to the improvement of plans and programs' implementation efficiency, and to the decision making important for the city and its complex social, economic, constructed, and natural systems.

It is evident that indicators are tools of changes, learning, and propaganda as their existence, absence, and prominence affect the behavior of all actors in the post-socialist cities. Nevertheless, there are many ways to transform the information into comprehensive indicators, such as audio-visual media, graphic design, and arts. Laurini (2001) especially underlines the prominence of multimedia and geographical information systems (GIS) that affect the extreme precision in processing, presentation, and utilization of information on urban and other types of spatial systems. Furthermore, there is a growing importance and role of so-called e-government.

The project of designing an indicators system of sustainable urban development for the city of Zadar is one of the first attempts of researching this problem in the Republic of Croatia parallel on two levels: local and city. During the research numerous secondary sources which include relevant foreign and local studies, planning and developmental documentation, cartographic, and other graphical foundations in analog and digital forms were consulted. Data collected on the field included sample of 1% population within limits of the city master plan. There were organized series of consultative meetings, workshops, and lectures where ideas, concepts, and first findings were checked. The results and recommendations of the NZZ project were also coordinated with the findings and recommendations of similar international initiatives. The project is in trend with world movement, more popular day by day, and focused on an integrated approach toward sustainable development measurements, communities, and cities throughout the world.

The suggested cluster of indicators has its own usable value and importance in the process of designing new approaches for decision making, planning, and development of our urban surroundings. Particular emphasis was put on the final users of city space – the inhabitants. They were enabled to use produced indicators as tools to make democratic, strategic, and practical decisions about resources which are located in their territory – the local community and the city as a whole. Simultaneously, suggested indicators cluster can help experts and representatives of city and local government to improve multiple communications, and together with citizens effectively influence the promotion of sustainable urban development as an imperative for better life quality for present and future generations.

After a thorough introduction of the results of numerous studies and practical examples, NZZ project was first to establish that indicators vary similarly with trends and with their help are being monitored. In this connection, design of adequate indicators cluster is only possible after establishing standards which chosen indicators must fulfill. These standards are relevance, validity, credibility,

measurement, consistency, apprehension, leadership, curiosity, engagement, availability, and acceptance. Second, the findings of the NZZ project are that in order to be effective and successful indicators must mobilize inhabitants; in other words, it is necessary to (i) relate to the entire community and its parts; (ii) reflect local visions and values; (iii) discover connections and systematic relations; (iv) balance resources and advantages with local needs and problems; (v) be creative and oriented toward actions. The project team suggested a flexible model of indicators system for monitoring sustainable development of Zadar and Pula. Since its theoretical foundation connected to the modern concept of sustainable development (Cavrić, 2009), and the local Mediterranean context where the NZZ project was conducted, the suggestion of the model is applicable to other coastal cities in Croatia. Of special value is its empiric component tested in the field with actual participants in urban life. Their opinions about sustainable urban environment where they live and work are incorporated within the interdisciplinary GIS database favorable for searching and editing with the assistance of ArcGIS program tools. The suggested model fulfills all functions of democratic, political-strategic, and reporting instrument at city and local level.

Transparency, multifunctionality, and the interdisciplinary nature of suggested indicators domains are reflected primarily in their dynamic nature, favorable for online searches and application within different urban applications (spatial planning, construction, protection of urban environment, engineering, socioeconomic planning, all the way to city management and its diversified resources). The suggested model and its extensions are serious support for objective decision-making process about sustainable city development and its subsystems. Unfortunately, this still does not exist in Croatia and it is reduced to a "top–down" approach which deprives citizens of a strong influence. The model advocates a systematic and sustainable mechanism of regular collection, analysis, and monitoring of indicators about urban trends, with the intention of correction of negative phenomena and processes, and direction of a further city development exclusively on sustainable foundations. Such formatted indicators matrix identifies an initial cluster of individual indicators grouped in domains (categories) which can change, adapt, and advance over time. The basis of this suggestion is a demand for production which helps to create (i) healthy, safe, and inclusive local communities; (ii) dynamic and perspective local economies with a special emphasis on the revival of coastal blue and green economies; (iii) sustainable natural and built environment; (iv) culturally enriched and vivacious local communities; (v) democratic and engaged communities.

Later it is possible to put indicators GIS database on Zadar web page, in other words, its local boards in the form of individual indicator cards (Fig. 11.4). With corresponding program upgrade the model can ensure dynamic questions and development of modern urban spatial scenarios such as "what if?" including calculation of so-called urban eco-foot prints, with a purpose to establish rational usage of city land. In connection with that, it is suggested to further develop and implement the model for other Croatian coastal cities.
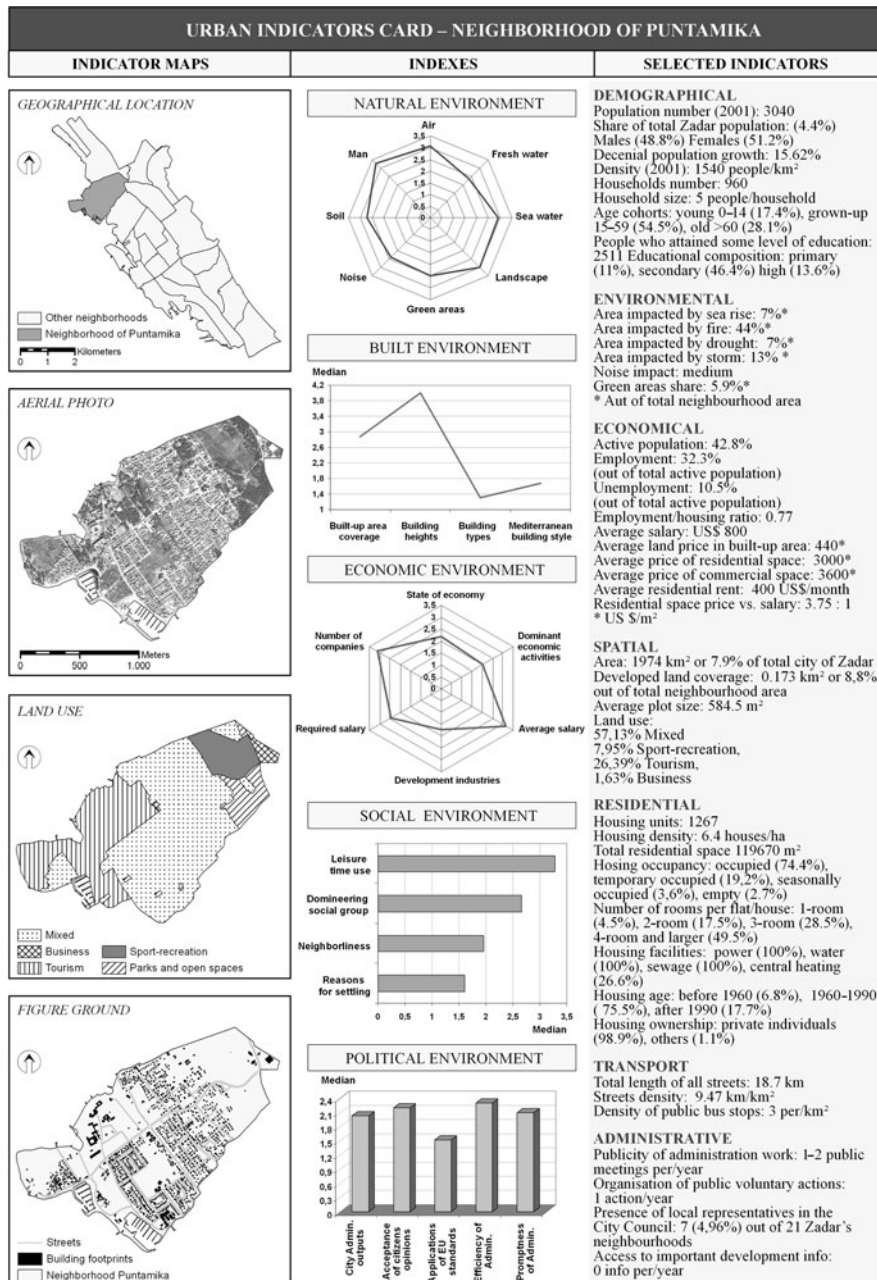
Fig. 11.4 Selected neighborhood indicator's card. Source: NZZ project GIS data base for Zadar (Šiljeg, Cavrić, Toplek 2009)

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Chapter 12
Quality of Life in Buffalo City: The Changing Position of African Women in a Post-apartheid City

Leslie Bank and Ellen Kamman

Abstract One of the limitations of analyses of apartheid is that they tend to focus largely or exclusively on the issue of racial domination and oppression. What is less often appreciated is that this system also modernized and entrenched patriarchal rule in African communities, especially urban areas. In this chapter, we begin by exploring the impact of apartheid on women in the townships of the main urban areas in the new Buffalo City municipality, namely East London and King William's Town, in the Eastern Cape Province of South Africa. The argument we make is that the social and economic marginalization of African women in Buffalo city gained a great deal of momentum under apartheid, with the government's intolerance of female enterprise and property ownership by African women in the city. Although some gains were made by women in industrial employment in the middle to late apartheid period, we suggest that there was a definite decline in the social and economic power and opportunities for African women in the urban townships of Buffalo City during the second half of the twentieth century. We argue that many of these changes were linked to new institutional and legislative measures taken against women under apartheid. We then go on to argue, however, that many of the restrictive laws which undermined women's rights as citizens were removed with the collapse of apartheid and creation of a new dispensation where gender equality was enshrined in the new constitution. But what have these legislative changes actually meant for ordinary African women in an ordinary South African city? This chapter explores this question directly by interrogating quality of life data collected for the Buffalo City Municipality Quality of Life Studies of 2001 and 2007. The chapter investigates the situation of African women in Buffalo City (see insert) in 2001, when the first quality of life survey took place in that city, compared to the situation of the rest of the population in that year, and then see how their situation has changed in 2007, when the second quality of life survey took place. Are

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the policies that aim at redressing the inequalities of the apartheid government having the desired effect in terms of service delivery? Has the quality of life improved for this category of the urban population? The chapter highlights important areas where lives and opportunities available to African women have changed over the past decade. The chapter concludes that positive and progressive state policies have changed women's lives for the better but that there are still some worrying trends and struggles that lie ahead, especially finding ways to arrest deindustrialization and increase the involvement of African women in the productive urban economy.

Buffalo City Municipality forms part of the Eastern Cape, the second largest province in South Africa. The Eastern Cape covers an area of more than 170,000 km^2 and represents about 14% of South Africa's land mass. It is located on the South-Eastern shores of South Africa. The municipality was formed in 2000 through an amalgamation of the local municipalities of East London, King William's Town, Bhisho and some smaller municipalities. Buffalo City is located between the former homelands of Ciskei and Transkei. Bhisho is the capital of the former Ciskei, and is now the provincial capital of the Eastern Cape. The coastal town of East London is South Africa's only river port. It is estimated that about 880,000 people live in Buffalo City. A third of those live in Mdantsane, South Africa's second largest township. More than 80% of the people in Buffalo City are African, about 10% are white, 6% are coloured and just under 2% are Asian. (www.buffalocity.gov.za)

Introduction

The creation of Buffalo City as a municipality which includes the coastal city of East London, the commercial and administrative centre of King Williamstown as well as numerous villages and hamlets around these settlements is a new development in the Eastern Cape. For the first time in the history of the region, municipal authorities now include both urban and rural areas in their territorial units. This has posed some challenges for management and planning of the city, which has now had to cater for a new rural population. Many of the so-called rural areas in Buffalo City are, however, difficult to classify as rural because most of the people living there are no longer actively involved in agricultural production. Most of the rural areas are effectively peri-urban settlements which are dependent for their survival on urban wages and welfare grants, although residents do generally have access to some land for cultivation and to communal grazing for livestock. Typically rural families cultivate a small residential garden and keep some small stock such as pigs, goats or chickens. These activities are undertaken at a low level of intensity and it would be impossible for rural households to contemplate survival without cash income from state transfers and wages. Most rural residents are located in closer settlement villages, many of which have access to some level of basic service provision. The vast majority of

the population is located in the urban centre and, in the case of African women, they are mostly located in and around (often in informal settlements) former apartheid townships such as Duncan Village, Mdantsane and Zwelitsha. The experience of African women in the city has thus been intimately connected and shaped by the history of township urban development in the Buffalo City municipality.

This chapter focuses on the changing position of women in Buffalo City. It begins with a discussion of the urbanization of women in the first half of the twentieth century into the city from the surrounding rural areas and the role they played within the urban context prior to the introduction of apartheid policies. In this section we highlight the relative freedom African women enjoyed in the urban areas prior to apartheid as well as their ascendant economic position in the residential property market and as informal traders in the city. In the second section we highlight the dramatic changes wrought by apartheid urban policies which denied women access to property in the city and closed down economic opportunities in the informal sector. Economic and social power in the townships of South Africa rested with men, who clashed in the 1980s on ethnic and generational grounds as they asserted dominance over the space of the township. The chapter argues that apartheid policies reconfigured and entrenched patriarchy in the cities and left African women in a marginal position socially and economically. This changed with the collapse of apartheid and the birth of a new democracy in South Africa and especially with the establishment of a constitution which guaranteed women equal rights in every sphere of society.

Against the backdrop of this discussion the chapter goes on to explore how the position of African women has changed in Buffalo city in the post-apartheid period. Using quality of life surveys undertaken in the city in 2001 and 2007, the chapter measures change across a range of social indicators in an effort to identify areas of change and improvement in women's lives over time as well as to assess their position relative e to the rest of the urban population. In the chapter special attention is given to women's changing access to basic social services, income-earning opportunities and an improved standard of life. The analysis provides evidence that quite significant change has occurred in some areas, but that women still experience disadvantage in a number of areas. The chapter is particularly useful in helping policy makers and planners identify where exactly those areas are and provide some indication of the kind of actions that might be necessary.

The Position of Women in Buffalo City Before and During Apartheid

In the first half of the twentieth century African women moved into the urban locations, which had been specifically designated for African urban settlement in East London and King Williams, from surrounding rural areas where poverty and drought often drove women to urbanize in search of new livelihood opportunities. Mager (1999) has suggested that during the interwar years there were many "runaway girls" among those who were fleeing unwanted marriages and patriarchy in

the rural areas. One of the features of the consolidation of tribal rule under colonialism was that rural headmen and chiefs were given extended power to rule over their subjects and local tribal courts became very influential in the lives of rural men and women. The entrenchment of patriarchy in the rural areas led women to gravitate towards the city, where they took up residence with relatives or secured a place by renting a room. Over time some of these women managed to acquire their own residential sites and often were able to build their own houses, a privilege which they did not enjoy in rural areas.

In the middle years of the twentieth century, African women in the urban locations of East London and King Williams Town also won the reputation of being stubborn, spirited and fiercely independent (see Hunter, 1936). They were actively involved in political protests against unjust laws in the city in the 1950s and were also known to construct households consisting of women and children only, without adult men (Minkley 1996; Bank, 2010; Pauw, 1963). Many of these households were entrepreneurial in orientation and made a good living renting rooms and selling beer to migrants. Local elites criticized these women for "lowering the tone" of the locations by selling beer and encouraging prostitution. The latter petitioned the government to do something about independent women whose "fatherless families" they insisted "encouraged juvenile delinquency" which led to gangsterism and urban political unrest. The evidence from the pre-apartheid period of urbanization thus reveals that women enjoyed relative freedom and seemed to have the same rights as black men in the city. They could access lodging and residential property in their own names and live in the location without having to succumb to male authority. They were also allowed to trade goods and commodities and were able to acquire permits to do so. The decision by women to focus on informal income earning in the location was also related to the very limited opportunities that existed for women on the formal labour market in the city at this time. In the 1950s and 1960s, there were some industrial jobs for black women in local canning factories, but not much outside of that sector, except for domestic work in the kitchens of white suburban women (cf. Bank, 2010; also see Freund, 2007, especially Chapter 7).

Under apartheid, racial discrimination and oppression in South Africa was modernized and intensified. This process occurred in dramatic fashion in East London when the apartheid regime decided that East London could cut down its African population by relocating residents from the overcrowded urban locations to the Ciskei and Transkei homelands, both of which were located on the fringes of the city. In a dramatic move in 1965, the apartheid government bulldozed the old African locations in East London and forcibly removed over 8,000 families, either to rural villages or in the sprawling new homeland township of Mdantsane in the Ciskei. Mdantsane was planned as a semi-rural, commuter zone which would supply the city with cheap labour, but keep Africans pinned back in the homeland political system. Inside East London and King William's Town the old locations were replaced with smaller townships. In these townships women were only allowed to reside in the city as the dependents of men, as their bona fide wives or daughters. Single women and female-headed households were endorsed out of the city. In the townships of the 1960s and 1970s, African women thus existed in the city as the dependents of black

men, as their subservient wives and daughters. They were meant to be mothers and keep house while their men went out to work (cf. Bank & Makubalo, 2007; Bank, 2010).

If the city and the township became a male space, the workplace in South Africa had also changed significantly by the mid-1980s. The first and most striking change was the rising level of unemployment in the society. The days of full employment in urban areas were over by the mid-1970s and the capacity of the industrial economy to absorb new unskilled and semi-skilled jobs decreased. At one level the history of political protest in South Africa very closely tracks economic performance. The Soweto 1976 student protest came at precisely the time that unemployment was starting to rise in the townships. This process accelerated in the 1980s when township unemployment levels increased to around 30% (cf. Bank, 1997). Economic and political tensions in the urban areas created conflict between men of different generations as the youth increasingly criticized their fathers for failing to resist the humiliation of apartheid. Ethnic tensions were also unleashed in the city as competition for resources escalated. Moreover, it was noted that, if men led the way in the factories of the 1950s, by the 1980s many positions were being filled by African women, especially in the textile, electronic and service sectors (see Swilling, 1987; Mager, 1989). By the 1990s employment levels between black men and women were no longer at the 80:20 ratios of the late 1950s and were increasingly reaching parity in many sectors. The economic basis for township patriarchy had been steadily eroded and by the 1990s women were economically more secure in the city again, but they were still politically and socially vulnerable (cf. Bank & Makubalo, 2007).

Post-apartheid Developments

The election of a new democratic government in South Africa and the acceptance of a constitution which enshrined equal rights for women marked a massive change from the policies and practices of apartheid. It created a platform on which women could enter the new democracy with confidence and a new sense of optimism. In theory, at least, they would now be citizens equal to men and would be able to once again own property in their own names and have access to the same opportunities as men. They would also not have to kowtow to demands of young men half their age and could reclaim their urban citizenship as independent agents in the city. In practice, urban transition has been much more complicated. Men have not been prepared to accept women as equal citizens and have unleashed a barrage of aggression and violence against women and children. With male unemployment in many parts of Buffalo City is creeping ever upwards and most of the new economic opportunities, in shopping malls, retail parts and the government sector going to women, male anger and disaffection reached new levels. Informally this has translated into a crisis of identity, where women still expect men to become breadwinners and men fail to realize that role. This thwarting of accepted gender roles and identities has

proved to be very destabilizing and created a host of social problems, which have been compounded by the fact that women are now the main recipients of welfare grants from the state, another source of income which seems to have eluded male control.

It is our assertion that African women in the townships of Buffalo city and some of the peri-urban areas would have seen the post-1994 period as one of opportunity for them to redefine their role and position in society. It is also clear from the evidence on urbanization that many women in the rural areas outside of the municipal boundaries saw the changes associated with democratization as an opportunity to move away from the villages to which many had been confined during the apartheid years. Young women in their early and mid-twenties were among the most enthusiastic to leave the villages, which offered no future for them. They were reluctant to follow the paths of their mothers, who had either chosen or been forced to stay in the rural areas, and had experienced a life of hardship raising their families there. However, dangerous and challenging urban life was, they figured that it offered them better life opportunities than staying back in the villages. The young women of the 1990s, like their counterparts in the 1930s who fled drought and patriarchal excesses in the countryside for life in the urban locations, came to Buffalo City in growing numbers in the 1990s looking for work and a place to settle. A survey of urban informal settlements in the city in 1998 discovered that two young women were moving into the backyards and informal settlements in the city for every one man. One of the reasons for the decision of young women to choose East London at this time was that it was closer to their rural homes and thus allowed them to make frequent home visits (which was especially important if their mothers were looking after children in the rural areas).

By the 2000s, the lack of new economic opportunities in the city had driven the younger generation further afield. From 2000 onwards it appears that more young women and men from rural areas around the city were inclined to "shoot straight" for the larger metropolitan areas where economic and employment growth was more robust than in Buffalo City. In the period covered by this study, 2001–2007, there has been a steady urbanization of poverty in the Eastern Cape as well as rural residents have continued to gravitate towards towns and cities in search of services, medical treatment and opportunities to earn income. In Buffalo City, much of the new growth has been on the urban fringe where settlements around established townships and urban centres have densified. People have also been attracted to peri-urban settlements on tribal land because the city council is generally not able to recover costs for service delivery in these areas and therefore access to water and basic sanitation services is often free. The crime rate is also often lower in the peri-urban areas than in the densely settled informal settlements in the major townships, like Duncan Village in East London. The impression one gets is that influx into historic and new urban townships has stabilized since the 1990s but that there is steady growth in informal settlements around the city. One of the features of migration into the city since mid-1990s has been that women have far outnumbered men in new informal settlements. More women are moving into Buffalo City than men (cf. Bank, 1998).

Overall the period of the 1990s and 2000s was very different from the preceding three apartheid decades during which opportunities for women to settle, work and develop in urban areas in the city were very limited and their permanence in the city was under threat. In the neighbourhoods within which they lived they were dependent on men to justify their existence in the city and were generally vulnerable and insecure in their places of residence. Divorce or estrangement from their husbands could lead to eviction from the city. Similarly it was very rare for widows to be allowed to continue to rent their township houses from the municipality after the husbands died. In most cases they were "endorsed out" of the city and forced to stay with relatives or go to the rural areas, where patriarchal systems of control were also firmly entrenched. By the mid-1990s this scenario had changed and women now could enter and settle in the city in their own right. They grasped this opportunity with both hands and moved into new shack and backyard environment to assert their right to the city. Many young women with children built their own shacks in the backyards of their parents' houses in the townships and asserted a right to stay there permanently. Young men were often pushed out to find their own way in the city but women could stay on as long as they did not clash too seriously with their parents. In developing a sense of the place in the city women faced many obstacles (cf. Bank & Makubalo, 2007; Bank, 2010).

Quality of Life Survey

In 2001, the newly formed Buffalo City municipality undertook the first quality of life survey, which was seen as a baseline study. The aim of the study was to inform the decision makers in the IDP process, where every municipality in the country had to submit an "Integrated Development Plan". At that point in time, information for decision makers was scarce, and most statistical information came from the 1996 Census data. However, in the decade since the 1994 elections, changes were taking place at a very fast pace, and the information was likely to be outdated. The 2001 QOL study was to give the decision makers in the city vital information for planning purposes. The country's next census was taking place in the same year, but the results would only be released in 2003, which was too late for inclusion in the IDP process. Also, the census data would not collect information about the citizens' well-being, a vital part of the quality of life survey.

The data was disseminated to the people in the city through an Easy Reader, which was used extensively to inform the interested parties about the findings.

The next Buffalo City quality of life survey took place in 2007. There was a need for updated information about the city. The next census would only take place in 2011. To bridge the time until then, Statistics SA was planning to undertake a Community Survey, collecting similar information as the census, but in a sample of the population. This data would be helpful for planners and decision makers, but again, the release of the Community Survey data was only expected during 2009. A further limitation of the Community Survey was that the data was to be released

on a municipal level, and further breakdown to ward level would not be possible. The Buffalo City municipality expressed the need for a second quality of life survey, and this survey took place during 2007. Again, the information gathered was disseminated in the form of an Easy Reader, this time comparing the 2001 data with the 2007 data.

Data Collection

In the 2001 survey, the sample frame included all 45 municipal wards in the Buffalo City municipality. For each ward, it was determined upfront what the predominant housing type and population group was, based on data from the 1996 Census. This approach was used to ensure inclusion of all the population groups and housing types, especially ensuring the inclusion of a sufficient sample of the minority groups in the city. The sample for each ward was calculated on probability to size principle of inclusion. In each ward, two random starting points were selected.

Interviews were done by teams of trained field workers, who would spend about 2 days in each ward. Households were selected using interval sampling, where every nth household is approached for interview. Households unavailable at the time of selection were visited on different times of the day. If the household was not available for the interview after three visits, this household would be substituted using strict fieldwork protocols.

Once the household was selected, and there were more than two adults in the household, the interviewer would randomly select the respondent using a KISH grid. The first part of the interview (household-level information) was then conducted with the head of household, and the second part of the interview (opinions, individual-level information) was conducted with the randomly selected individual. The interviews took an average of 45 min to an hour to complete. Respondents did not receive any incentive for participation in the study.

In the 2007 survey, the method of stratifying the wards on the basis of the predominant housing types was changed. The reason for this change was that the demarcations of the ward had been changed since 2001. In addition, the sample types used in 2001, such as "African formal" had become somewhat diluted due to continued residential movement in the municipality. The research team therefore decided that the sample would be purely "probability to size" on a ward level, using the newly demarcated ward boundaries as provided by Statistics South Africa. Sampling was again done in every single ward in the study area, and the methodology for selecting households and respondents within the households was not changed.

Instrument

The survey instrument was adapted from the instrument used in the Ethekwini quality of life surveys. The instrument consisted of a household roster, with some

demographic information about all the members of the household, followed by a section with household-level information (housing type, household services, household income and expenditure). This section was completed by the head of household, who was deemed to be the most knowledgeable person to answer these questions. The next section of the questionnaire was completed by the second respondent, and contained information that was of a more personal nature: social connections, opinions about community features, quality of life questions and personal use of transport. With this design, the survey would not only yield information about the household's physical status, and the municipal services that they have access to, but also the more personal information about quality of life, participation in the community and opinions about community services.

Of 2,476 respondents in the 2001 survey, 1,186 were African females. In 2007, 1,486 African females were interviewed. This chapter focuses on this group only, to try and identify whether the changes in physical circumstances and emotional well-being are different from those of the rest of the population (Tables 12.1 and 12.2).

Table 12.1   Study population

	2001		2007	
	N	%	N	%
African women	1,186	48.3	1,486	59.3
Rest of population	1,272	51.7	1,022	40.7
Total	2,458	100.0	2,508	100.0

Table 12.2   Study population by population group and gender

	2001		2007	
Population group	Male	Female	Male	Female
African	760	1,186	764	1,486
Asian	23	43	10	8
Coloured	62	96	49	87
White	117	163	31	37
Total	962	1,488	854	1,618

Results: African Women in Buffalo City – 2001–2007

In the following section we first explore the changes in the physical aspects of life in Buffalo City. For many people in South Africa, basic needs like a secure dwelling and clean water have not been met, and the focus of the municipality is to enhance these circumstances to improve the quality of life of its citizens. The idea is that improving the housing status, providing basic municipal services like water,

electricity, and sanitation, and trying to improve employment status and income status of the households, will have a direct effect on the overall quality of life of the people. Besides this direct effect, there will be an indirect effect, which is in the way the people perceive their circumstances. The situation in South Africa is interesting, because for many people, the physical circumstances have not changed much over the past few years, but because apartheid was abolished and there is a new democratic government, people are happier about their circumstances than they were before. However, 15 years into democracy, people are now starting to get more and more impatient for changes to happen. So the second part of this chapter looks at the changes in perceptual elements of quality of life: how do people perceive their situation, and how satisfied are they with different aspects of their lives. Changes in these perceptions can in turn have an effect on the overall quality of life. Third, changes in the overall quality of life can have a "spill over" effect on the perceptions that people have of their circumstances. The happier people are with their lives as a whole, the higher they will rate their situation. The following indicators are explored in this chapter:

Physical elements

- Dwelling type
- Type of water supply
- Energy source most used for cooking
- Energy source most used for lighting
- Type of electrical supply
- Toilet facility
- Employment status
- Individual income
- Ability to save
- Ownership of household items

:

Perceptual elements

- Satisfaction with dwelling
- Perceptions of crime
- Feeling of safety during the day
- Feeling of safety at night
- Worry about HIV/AIDS
- Satisfaction with the amount of time to do the things they want to do
- Satisfaction with the way in which leisure time is spent
- Satisfaction with marriage or relationship
- Satisfaction with family life
- Satisfaction with friends
- Satisfaction with income of self and family
- Satisfaction with standard of living
- Satisfaction with the amount of money available to respondent personally

Overall rating of quality of life

Housing

In 2001, 57% of African women in Buffalo city lived in formal houses on a separate stand. By the time of the 2007 survey, this had dropped to less than 50%. By comparison, nearly 59% of the rest of the respondents lived in a formal house in 2001, compared to 53% in 2007. One of the possible explanations for this unexpected reduction in formal housing is the introduction of two more categories on the 2007 questionnaire (which are gathered under "other" in the table below). Furthermore, the methodologies were different and this could have resulted in a higher proportion of informal housing and a lower proportion of formal housing being included in the sample. Despite these factors, there are some marked differences between the African females and the rest of the population. The proportion of African females living in townhouses or clusters stayed the same, whereas the rest of the population was less likely to live in these types of dwellings. They were less likely to live in traditional dwellings compared to the rest of the population (2% increase compared to a 6.8% increase) (Table 12.3).

Table 12.3 Dwelling type *("Which type of dwelling does this household occupy?" 2001 & 2007)*

	2001		2007		% change	
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
House or formal structure on separate stand	57.0	58.7	48.6	53.3	–8.4	–5.4
Flat in block of flats	0.7	1.8	2.8	6.4	2.1	4.5
Town, cluster or semi-detached house	1.4	9.3	1.8	2.5	0.5	–6.7
Room or flatlet in main dwelling	0.1	0.2	0.2	0.5	0.1	0.3
House, flat or room in backyard	0.4	0.5	0.3	0.7	–0.1	0.2
Informal dwelling or shack not in backyard	21.8	17.3	13.6	9.5	–8.2	–7.8
Informal dwelling or shack in backyard	0.4	1.0	3.0	2.6	2.6	1.6
Traditional dwelling, hut or structure made of traditional materials	18.1	11.1	21.0	17.9	2.9	6.8
Other	0.2	0.1	8.6	6.6	8.4	6.5
Total	100.0	100.0	100.0	100.0		

Water

The provision of clean water to residents is a very important measure of municipal performance. Overall, more residents have access to clean water. African women were at a disadvantage compared to the rest of the population in 2001. At that point, just over 50% of them had access to piped water in their dwelling or yard, compared to more than 62% of the rest of the respondents. The African women had to rely more on street taps or standpipes (41%) than others (29.7%). By 2007, the situation had improved for everybody, but African women had started closing the gap: almost 58% had water in their dwelling or yard, an increase of 7.1%. For the rest of the population, the increase was slightly smaller: from 62.6 to 66.1%. Almost no residents in Buffalo City had to make use of water from dams, rivers or streams (Table 12.4).

Table 12.4 Type of water supply *("What is the main water source for this household?" 2001 & 2007)*

	2001		2007		% change	
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
Piped water in dwelling from full pressure pipes or in yard*	50.8	62.6	57.9	66.1	7.1	3.5
Piped water in dwelling from roof tank	2.0	3.2	0.2	0.1	−1.8	−3.1
Ground tanks next to house, bailiff operated	0.4	0.5	1.3	1.0	0.9	0.5
Street taps or standpipes	41.0	29.7	37.4	29.8	−3.6	0.1
Borehole, rainwater tank or well	0.6	0.4	1.6	1.6	1.0	1.2
Dam, river, stream or spring	4.1	2.5	0.3		−3.8	−2.5
Other*	1.1	1.3	1.3	1.5	0.2	0.2
Total	100.0	100.1	100.0	100.0		

Electricity

Since the start of democracy in South Africa in 1994, a concerted effort was made to electrify as many households as possible. This would reduce the need for expensive and dangerous methods of cooking, and generally increase the quality of life of the citizens. Paraffin leads to a high incidence of fires, which are particularly dangerous in densely populated informal settlements. In 2001, more than 42% of

the African female population still used paraffin for cooking purposes. This percentage was much higher than the rest of the population, where just over 30% used paraffin. African females were also more likely to use wood for cooking purposes. Only 44% of the African females used electricity for cooking, compared to more than 61% of the rest of the population. By 2007, the use of paraffin had declined to 30% for African women, and 23% for the rest of the population. Electricity was used by 62.9% and 71.4% respectively. Again, the African women had been at a disadvantage in 2001, but were catching up with the rest of the population (Table 12.5).

Table 12.5 Energy source most used for cooking *("What energy source is most used for cooking?" 2001 & 2007)*

	2001		2007		% change	
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
Electricity	44.3	61.1	62.9	71.4	18.5	10.3
Gas	2.5	2.1	4.8	5.0	2.3	2.9
Paraffin	42.8	30.7	30.7	23.1	–12.1	–7.5
Wood	9.5	5.9	1.5	0.4	–7.9	–5.5
Coal	0.5	0.2		0.1	–0.5	–0.1
Dung	0.3		0.1		–0.2	0.0
Other	0.1	0.1			–0.1	–0.1
Total	100.0	100.0	100.0	100.0		

When we look at the use of electricity for lighting, we can see the effects of the electrification clearly. In 2001, more than 70% of the population were using electricity for lighting, and most of the others were using paraffin. By 2007, the percentage of people using electricity for lighting had risen to 83.2% for African women and 88.1% for the rest of the population. The use of paraffin had declined to less than 16% (Table 12.6).

Table 12.6 Energy source most used for lighting *("What energy source is most used for lighting?" 2001 & 2007 – response codes added in 2007)*

	2001		2007		% change	
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
Electricity	71.6	78.3	83.2	88.1	11.6	9.8
Gas	0.6	0.4	0.3	0.6	–0.3	0.2
Paraffin	27.3	21.0	15.9	10.9	–11.4	–10.2
Other (wood, candles etc.)	0.5	0.2	0.6	0.4	0.1	0.2
	100.0	100.0	100.0	100.0		

Among the African women, the number of households with no electrical supply declined from 26.2% in 2001 to 15% in 2007. In the rest of the population, the decline in households without electricity was similar, from 20.6% in 2001 to 9.7% in 2007. The vast majority have electricity supplied with prepaid cards (Table 12.7).

Table 12.7 Type of electrical supply *("Does this household have electricity?". If Yes "what type of electrical supply does this house have?" in 2001, and "What type of electrical supply does this house have?" in 2007, response codes added for "no electricity, solar energy, illegal connection and connection to neighbour with permission")*

	2001		2007		% change	
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
Conventional meter	4.8	28.5	6.1	11.2	1.2	–17.4
Prepaid card	69.0	50.9	76.4	76.8	7.4	25.9
Solar, wind generator or petrol or diesel generator			0.1	0.2	0.1	0.2
Illegal connection			1.1	1.1	1.1	1.1
Connected with permission to neighbour			1.3	1.1	1.3	1.1
Does not have electricity	26.2	20.6	15.1	9.7	–11.1	–10.9
Total	100.0	100.0	100.0	100.0		

Toilet Facility

Together with a clean water supply, a high standard of sanitation will ensure higher levels of hygiene and is important in reducing the child mortality rate in developing countries. The "ideal" type of toilet facility is considered to be a flush toilet, while septic tanks and VIP (Ventilated Improved Pit latrines) are considered to be acceptable. African women in Buffalo City mostly have access to flush toilets. In 2001, nearly 60% used full waterborne flush toilets, septic tanks or VIPs. This percentage was lower than for the rest of the population, where about 70% used these kinds of facilities. Unfortunately, by 2007, the toilet facilities had not improved much at all. There was an increase in use of basic pit latrines, and a slight reduction in the use of communal toilets and households without a toilet facility (Table 12.8).

Table 12.8 Type of toilet facility (*"What type of toilet facility is available in the house/on plot?"* 2001 & 2007, *"on plot" deleted in 2007*)

	2001		2007		% change	
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
Full waterborne	53.6	67.8	53.6	62.3	0.0	−5.6
Septic tank	1.0	0.3	0.1		−0.9	−0.3
Ventilated improved pit latrine	3.1	2.2	2.6	2.4	−0.6	0.2
Basic pit latrine	25.2	17.8	29.7	24.7	4.5	6.%
Chemical toilet			0.1	0.2	0.1	0.2
Communal toilet	7.1	5.7	5.7	5.2	−1.4	−0.5
No toilet, bush or bucket	10.0	6.2	8.2	5.3	−1.8	−0.9
Total	100.1	100.1	100.1	100.1		

Income and Savings

While the percentage of African females describing themselves as unemployed had declined from 33.9% in 2001 to 30.2% in 2007, it is interesting to note that the percentage of unemployed had increased slightly for the rest of the population. But if we look at the percentage of employed people in both groups, we can see that the percentage of employed African women also declined, and at a faster rate than the rest of the population. More African females were classified as discouraged work seekers, or were no longer economically active. By comparison, the rest of the population's employment status didn't change much, except for a small increase (2%) in unemployed and a small increase in "discouraged work seekers", and slight decrease in employed and non-labour force (Table 12.9).

Table 12.9 Employment status (*"Employment status" in 2001, and "Does the person currently work (for pay, profit or family gain?", followed by "Is he/she one of the following?" – reason for not working – in 2007, both in the household roster)*)

	2001		2007		% change	
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
Unemployed	33.9	23.8	30.2	25.8	−3.8	2.0
Employed/working	33.2	44.4	23.8	43.2	−9.4	−1.2
Discouraged work seeker	2.1	2.2	8.8	4.3	6.7	2.1
Not in labour force	30.8	29.7	37.2	26.7	6.5	−2.9
	100.0	100.0	100.0	100.0		

When we take a look at individual incomes, we can see that the monthly income of African females has increased. In 2001, the majority of African females reported that they didn't have any income. By 2007, this had dropped to 25%. In the rest of the population, where 43% had no income in 2001, the proportion with no income had dropped to 32% in 2007. Most of the African females now had an income of between R800 and R1,500. With the employment figures in mind, one could speculate that this increase in personal income may be due to the extended availability of child support grants and other government grants (Table 12.10).

Table 12.10 Individual monthly income *("Monthly income brought into home" in 2001, and "Can you tell me what is the total amount of money brought into the household per month after deductions such as tax, medical aid and pension contributions, incl. total income from work and/or grants and other sources?" in 2007)*

	2001		2007		% change	
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
No income	50.6	43.0	25.7	32.0	–24.8	–11.0
R1–R800	29.6	21.3	27.0	14.2	–2.6	–7.1
R801–R1,500	6.4	8.2	34.3	27.3	28.0	19.1
R1,501–R6,000	12.4	20.2	11.0	19.6	–1.4	–0.7
More than R6,000	1.0	7.2	1.9	6.9	0.9	–0.4
	100.0	100.0	100.0	100.0		

With the increases in income, one would expect that people would have more chances to save. In 2001, 17.5% of the African females managed to save any money, the same as the rest of the population (17.3%). But in 2007, the proportion of African females who managed to save had dropped to 14.5%, while the rest of the population was more likely to be able to save (21.2%). So despite the relative increase in income, the African females didn't manage to save as much, which is an indication of financial strain. Obviously, the income increased in real terms, but with inflation[1] being high, the actual financial gain is minimal. It is interesting to see the different dynamics between the African females and the rest of the population (Table 12.11).

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[1]Inflation for February 2006 to February 2007 (when fieldwork took place) was 5.7% (Statistics South Africa, 2007). Between 2001 and 2007, the inflation rate varied, with a peak in inflation of 13% in late 2002.

Table 12.11 Household manages to save money after expenses are paid *("Excluding investment or pension, do you save any money after all expenses?" 2001 & 2007)*

	2001		2007		% change	
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
Yes	17.5	17.3	14.5	21.2	–3.0	3.9
No	82.5	82.7	85.5	78.8	3.0	–3.9
Total	100.0	100.0	100.0	100.0		

Standard of Living

Car ownership seems to have decreased between 2001 and 2007, but the decrease was smaller for African females (who are much less likely to own a car than the rest of the population). The ownership of telephones or cell phones had increased dramatically. South Africa was one of the first countries to roll out prepaid mobile telephony. Most of the population would not qualify for expensive contracts due to lack of stable and formal income. The mobile telephony providers launched prepaid mobile telephony, which was a huge success, especially in the rural areas where fixed lines were difficult to get. It made mobile telephony available to the poorest of the poor. The success of this can be seen in the availability of phones: more than 70% of the population have access to a phone in 2007, compared to 33.2% (African women) and 47.7% (rest of the population) in 2001.

Access to television and fridges has also increased, possibly due to the increased electrification of households (Table 12.12).

Table 12.12 Ownership *("Does your household have the following?" in 2001, and added "connected, being used, in a good working order" in 2007)*

This household has a:	2001		2007		% change	
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
Car	12.4	35.7	9.2	21.5	–3.3	–14.1
Telephone	33.2	47.7	71.4	71.1	38.2	23.4
Television	64.2	72.8	75.2	82.4	11.0	9.5
Radio	77.0	82.1	82.9	87.7	5.9	5.5
Computer	5.5	21.0	4.0	13.3	–1.5	–7.7
Fridge	52.0	63.7	65.0	70.4	13.0	6.7
Piped hot water	19.7	40.1	10.9	23.2	–8.8	–16.9

Emotional Aspects

Between 2001 and 2007, the level of satisfaction with their dwelling decreased for most of the people in Buffalo City. African women were more likely to be dissatisfied with their dwelling in 2001, and the gap between them and the rest of the population widened in 2007, when more than half of the African women indicated their dissatisfaction with their dwelling, compared to just over 40% of the rest of the population (Table 12.13).

Table 12.13 Satisfaction with dwelling (*"How satisfied are you with the dwelling you are currently living in?" 2001 & 2007*)

	2001		2007		% change	
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
(Very) satisfied	40.9	52.4	37.6	46.4	–3.3	–6.0
Neither satisfied nor dissatisfied	9.4	6.5	10.6	12.6	1.2	6.1
(Very) dissatisfied	49.8	41.1	51.8	40.9	2.0	–0.2
	100.0	100.0	100.0	100.0		

Safety

In the survey, questions were asked about the respondent's perception of the crime situation compared to a year ago. In 2001, more than 60% of the respondents said that the crime situation had become worse compared to the year before. Only 13% said it had got better. There was not much difference between the African females and the rest of the population. By 2007, the picture had changed a lot. Less than 40% said that the crime situation had got worse, and while the percentage of the population who said the crime situation had improved remained low, there were many more people who said that the crime situation had stabilized. Again, the patterns were not very different between African women and the rest of the population (Table 12.14).

Table 12.14 Crime situation compared to 1 year ago (*"During the past year, has the crime situation in this area improved, stayed the same, or worsened?" 2001 & 2007*)

	2001		2007		% change	
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
Better	13.8	13.7	13.0	11.4	–0.7	–2.2
The same	22.3	26.2	47.5	50.1	25.2	23.9
Worse	63.9	60.1	39.5	38.5	–24.4	–21.6
Total	100.0	100.0	100.0	100.0		

With a stabilizing of the crime situation, whether perceived or actual, one would expect that people in Buffalo City would feel safer too. The percentage of people feeling very unsafe when walking in their area during the day remained stable, at around 5%. There was not much difference between African women and the rest of the population. Fewer people across the board feel very safe, but they now felt "fairly safe" (Table 12.15).

Respondents were then asked to indicate how safe they feel when they are walking around their area after dark. In 2001, more than half of the African women said they feel very unsafe when walking around their area after dark. By 2007, this figure had dropped to 43.9%. At the same time, the percentage of people feeling a bit unsafe had increased, and the percentage of people feeling safe or fairly safe had decreased. African women feel slightly less safe than the rest of the population, but there doesn't seem to be a large difference (Table 12.16).

Table 12.15 Feeling of safety walking in the area during the day[a] (*"How safe do you feel walking in the area where you live during the day?" 2001 & 2007*)

	2001		2007		% change	
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
Very safe	44.2	47.2	23.8	25.6	–20.4	–21.6
Fairly safe	38.6	39.0	50.6	50.3	12.0	11.3
Neither safe nor unsafe[a]			7.4	7.4	7.4	7.4
Bit unsafe	11.2	9.3	12.9	12.7	1.7	3.4
Very unsafe	6.0	4.4	5.3	4.0	–0.8	–0.4
Total	100.0	100.0	100.0	100.0		

[a]Please note that the response codes had changed between 2001 and 2007, as a code for "neither safe nor unsafe" was added to avoid non-responses. Therefore the focus will be on the extremes: people who feel very safe and people who feel very unsafe.

Table 12.16 Feeling of safety walking in the area after dark (*"How safe do you feel walking in the area where you live after dark?" 2001 & 2007*)

	2001		2007		% change	
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
Very safe	6.4	9.5	2.6	3.8	–3.8	–5.7
Fairly safe	18.5	24.7	6.3	9.5	–12.2	–15.2
Neither safe nor unsafe*			10.1	12.4	10.1	12.4
Bit unsafe	22.6	25.5	37.1	38.2	14.5	12.8
Very unsafe	52.5	40.3	43.9	36.1	–8.6	–4.2
Total	100.0	100.0	100.0	100.0		

HIV/AIDS

HIV/AIDS is an enormous problem in South Africa. Latest figures released by the government indicate that an estimated 11.2% of the population of South Africa is infected with HIV.[2] This information was gathered by using predictive models. The most reliable source of information regarding HIV prevalence comes from the ante-natal clinics. In 2005, more than 30% of the women (mostly African women) who attended antenatal clinics were infected with HIV, an increase of 5% from 2001. Looking at these figures it stands to reason that people will be worried about HIV. We asked our respondents whether they were worried that they or someone close to them might be infected with the virus that causes HIV/AIDS. In 2001, just over 21% of the African females said they were not worried at all, and 62% said that they were very worried. In the rest of the population, 29.6% of the people said they were not worried at all, and just over 52% said they were very worried. By the time of the 2007 survey, fewer people said they were not worried at all, and the gap between African women and the rest of the population closed (Table 12.17).

Table 12.17 Worried about HIV/AIDS *("Have you ever worried before that you or someone close to you might be infected with the virus (germ) that causes AIDS?" 2001 and word "germ" omitted in 2007)*

	2001		2007		% change	
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
Not at all	21.6	29.6	17.4	19.9	–4.2	–9.7
A little	16.4	17.6	21.2	21.4	4.8	3.8
A lot	62.0	52.8	61.5	58.6	–0.5	5.9
Total	100.0	100.0	100.0	100.0		

Domain Satisfactions

When asked about their satisfaction with the amount of time to do the things they want to do, there was not much difference between the African female respondents and the rest of the population in 2001. About two-thirds (67%) of all the respondents said that they were satisfied or very satisfied with the amount of time available to them. By 2007, this percentage had dropped to 60% for the African females and 55.7% for the rest of the population. For both groups, the level of dissatisfaction increased slightly (Table 12.18).

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[2]HIV&AIDS and STI strategic plan 2007–2011, Department of Health, 2007 http://www.info.gov. za/otherdocs/2007/aidsplan2007/index.html

Table 12.18 Satisfaction with the amount of time to do the things respondent wants to do *("Can you tell me how satisfied or dissatisfied you are with these parts of your life: The amount of time you have to do the things you want to do?" 2001 & 2007)*

| | 2001 | | 2007 | | % change | |
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
(Very) satisfied	67.5	67.8	60.0	55.7	−7.6	−12.1
Neither satisfied nor dissatisfied	12.5	12.2	16.9	21.5	4.4	9.4
(Very) dissatisfied	20.0	20.0	23.1	22.7	3.2	2.8
	100.0	100.0	100.0	100.0		

In general, most people seem to be less satisfied with the way they spend their leisure time. Of the African women, more than 58% were satisfied with the way they spent their leisure time, compared to almost 67% of the rest of the population. Six years later, the level of satisfaction had dropped to just under 52% in both groups. Dissatisfaction with the way they spend leisure time increased to around 24% in both groups (Table 12.19).

For those who were in a marriage or relationship, satisfaction levels with that relationship were generally very high; almost 82% of African women were satisfied with their relationship compared to 89.7% of the rest of the population. Satisfaction with their relationship increased slightly for the African women, and decreased slightly for the rest. The percentage of respondents who indicated that they were not in a relationship increased slightly between 2001 and 2007 (from 34.7% of the African women to 40.5%, and from 23.7% of the rest of the respondents to 25%) (Table 12.20).

Satisfaction with family life was high for both groups of respondents, at around 85% in 2001. Both groups experienced a decrease in satisfaction levels with family life by 2007. This could be partially due to the fact that fewer people were in a relationship (see table above) (Table 12.21).

Table 12.19 Satisfaction with the way in which leisure time is spent *("Can you tell me how satisfied or dissatisfied you are with these parts of your life: The way you spend your leisure time – recreation, relaxation etc?" 2001 & 2007)*

| | 2001 | | 2007 | | % change | |
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
(Very) satisfied	58.4	66.9	51.9	51.6	−6.5	−15.3
Neither satisfied nor dissatisfied	24.9	18.3	24.1	24.5	−0.8	6.2
(Very) dissatisfied	16.7	14.8	24.0	23.9	7.3	9.1
	100.0	100.0	100.0	100.0		

Table 12.20 Satisfaction with marriage or relationship *("Can you tell me how satisfied or dissatisfied you are with these parts of your life: If married, your marriage or relationship with your partner?" 2001 & 2007)*

	2001		2007		% change	
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
Not in a relationship/ marriage[a]	34.7	23.7	40.5	25.0	5.8	1.3
(Very) satisfieds	81.9	89.7	83.1	86.4	1.2	–3.2
Neither satisfied nor dissatisfied	7.8	5.0	7.5	5.7	–0.3	0.8
(Very) dissatisfied	10.3	5.4	9.4	7.8	–0.9	2.5
	100.0	100.0	100.0	100.0		

[a]Not included in the satisfaction percentages below.

Table 12.21 Satisfaction with family life *("Can you tell me how satisfied or dissatisfied you are with these parts of your life: Family life: the time you spend & the things you do with them?" 2001 & 2007)*

	2001		2007		% change	
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
(Very) satisfieds	84.1	85.8	78.3	77.2	–5.8	–8.7
Neither satisfied nor dissatisfied	7.1	6.5	12.0	11.6	4.9	5.0
(Very) dissatisfied	8.9	7.6	9.7	11.3	0.9	3.6
	100.0	100.0	100.0	100.0		

A similar pattern emerged when we asked people about their satisfaction with friends. Even though the satisfaction levels remained high, they dropped from around 90% in both groups in 2001, to around 75% in 2007. There was, however, no increase in the dissatisfied group, but the group who said "neither satisfied nor dissatisfied" increased. The pattern is very similar for the African females and the rest of the population (Table 12.22).

All the respondents were asked how satisfied they are with their standard of living. African women expressed much more dissatisfaction with their standard of living in 2001 than the rest of the population (63.9 and 49.6% respectively). The levels of dissatisfaction dropped in both groups, to 57.6% for the African women and 46.4% for the rest. Interestingly, while satisfaction levels increased from 20.5 to 22.4% for the African females, the satisfaction level with standard of living dropped from 36.6 to 30.5% for the rest (Table 12.23).

In 2001, African females expressed high levels of dissatisfaction with their income and that of their families (89.1%), more so than the rest of the respondents

Table 12.22 Satisfaction with friends *("Can you tell me how satisfied or dissatisfied you are with these parts of your life: Friends?" 2001 & 2007)*

	2001		2007		% change	
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
(Very) satisfieds	88.8	90.8	73.0	75.8	−15.9	−15.0
Neither satisfied nor dissatisfied	6.0	5.6	22.3	20.4	16.2	14.8
(Very) dissatisfied	5.1	3.6	4.8	3.8	−0.4	0.2
	100.0	100.0	100.0	100.0		

Table 12.23 Satisfaction with standard of living *("Can you tell me how satisfied or dissatisfied you are with these parts of your life: Standard of living – the things you have like houses, car, furniture etc.?" 2001 & 2007)*

	2001		2007		% change	
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
(Very) satisfieds	20.5	36.6	22.4	30.5	1.9	−6.1
Neither satisfied nor dissatisfied	15.7	13.8	20.0	23.1	4.3	9.3
(Very) dissatisfied	63.9	49.6	57.6	46.4	−6.3	−3.2
	100.0	100.0	100.0	100.0		

(69%). In 2007, the African females seem to be more satisfied than in 2001, but the rest of the population is less likely to be satisfied with their own and family income (Table 12.24).

In 2001, the vast majority of African women were dissatisfied with the amount of money available to them personally (92.8%). In the rest of the population, 76% were dissatisfied. While 15% of the rest of the population were satisfied with the amount

Table 12.24 Satisfaction with income of self and family *("Can you tell me how satisfied or dissatisfied you are with these parts of your life: Your income and your family income?" 2001 & 2007)*

	2001		2007		% change	
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
(Very) satisfieds	5.9	20.4	11.5	15.1	5.5	−5.3
Neither satisfied nor dissatisfied	4.9	10.6	7.4	10.0	2.5	−0.6
(Very) dissatisfied	89.1	69.0	81.1	74.9	−8.0	5.9
	100.0	100.0	100.0	100.0		

Table 12.25 Satisfaction with the amount of money available to respondent personally (*"Can you tell me how satisfied or dissatisfied you are with these parts of your life: The amount of money you have available to you personally?" 2001 & 2007*)

	2001		2007		% change	
	African female (%)	Rest (%)	African female (%)	Rest (%)	African female (%)	Rest (%)
(Very) satisfied	4.7	15.0	12.7	17.4	7.9	2.4
Neither satisfied nor dissatisfied	2.5	8.9	7.7	10.3	5.2	1.4
(Very) dissatisfied	92.8	76.1	79.7	72.3	−13.1	−3.8
	100.0	100.0	100.0	100.0		

[a]Categories "Very satisfied" and "Satisfied" combined, and "Very dissatisfied" and "Dissatisfied" combined.

of money available to them personally, only 4.7% of the African females expressed satisfaction. By 2007, this had changed. The level of satisfaction for African women had increased to 12.7%, and the level of dissatisfaction had dropped to 79.7%. This was still higher than the rest of the population, but the differences were not as large as in 2001 (Table 12.25).

Life Satisfaction

Overall life satisfaction was lower among the African females than it was for the rest of the population. Only 26.9% of the African women expressed that they were satisfied with their life as a whole in 2001, compared to 44.1% of the rest of the population. More than half of the African women said they were dissatisfied or very dissatisfied with their lives as a whole, more than the 38.3% in the rest of the population who were dissatisfied.

Looking at the situation in 2007, we can see that the satisfaction levels among African women have not changed much at all. But in the rest of the population, satisfaction levels are lower (decreased from 44.1% in 2001 to 31.3% in 2007) and dissatisfaction levels are higher (from 38.3% in 2001 to 50.1% in 2007) (Fig. 12.1).

Conclusions

The evidence presented in this chapter suggests that the position of African women is changing in Buffalo City and that some of the historical disadvantages that women have experienced in the city in terms of their access to accommodation, income and services have improved. The results show that more people now have access to clean water in the city than was the case in 2001 and that African women are catching up with rest of population. Similarly it was found that considerably more people in

Life satisfaction

	2001	2007
■ African female	26.9%	27.9%
□ Rest	44.1%	31.3%

Year of the study

Fig. 12.1 Satisfaction with life as a whole *("How satisfied are you with your life as a whole these days?" 2001 & 2007)*

the city have access to electricity and are using electricity for cooking which has made the lives of women in the city easier. Perhaps most significantly it was found that a large portion of women who claimed that they had no access to income in 2001 are now able to report that they are receiving income on a monthly basis. This change has had profound implications for the lives of women, but does not seem to be the result of any significant increase in employment opportunities for women in the city. It is rather a reflection of the growing access women in Buffalo city have to state welfare benefits. In the period between 2001 and 2007 the state expanded the reach of the welfare system by increasing the value and reach of existing disability and pension grants, as well as consolidating support for child support. The latter grant together with new provisions made for fostering children has allowed growing numbers of women to access the welfare system and this seems to be the main reason for increases in income noted.

Growing dependence within Buffalo City of welfare payments, state transfers and government employment is a matter of considerable concern. The lack of diversity in the urban industrial and manufacturing economy has made the city very vulnerable to deindustrialization, which has occurred rapidly since the global recession of 2009. It is now reported that more than 50,000 industrial jobs have been lost in the Eastern Cape since the recession began and it might be estimated that at least a third of those jobs were lost in Buffalo City. Some of the sectors where women had made the most progress in the job market over the past three decades, such as the textile sector, have been the most profoundly affected by the global recession. This means that, while women in Buffalo city are gaining better access to state welfare provision, they are

not necessarily gaining improved access to formal sector employment. It was also noted that as a result of women's improved access to income they were able to buy a larger range of consumer goods.

On the negative side, women expressed more concern about crime than they had in 2001 and generally felt less safe. They were also more worried about HIV and AIDS than the rest of the population and were less satisfied with the way they spent their leisure time. Overall life satisfaction had only increased marginally for women in Buffalo city between 2001 and 2007. However, this increase should be seen in the context of a sharp decline in life satisfaction among men, whose general levels of life satisfaction had decreased from almost 45% to just over 30%. The conclusion that can be drawn from this study is that women have improved their position relative to men quite considerably in the city, but still lack access to the key economic resources, such as housing and profitable opportunities in the informal sector, which underpinned their economic power and success in East London in the period prior to apartheid. The central challenge for women in Buffalo City over the next decade is to increase their participation in the formal and informal economy and consolidate better earnings and opportunities for themselves in the productive economy of the city.

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Chapter 13
Monitoring Indicators of Living Conditions in a South African Urban Community

Valerie Møller and Sarah Radloff

Abstract A social indicators community project was launched in 1999 to monitor changing living standards in Rhini, a low-income suburb of Grahamstown, Makana Municipality, South Africa. Since 1994, under democratic rule, considerable progress has been made in service delivery to the formerly disadvantaged in South African society in terms of access to housing, infrastructure, and a social safety net to mitigate the high rate of unemployment. Results from two representative cross-sectional household surveys (n862/n1,020) conducted in 1999 and 2007 in Rhini demonstrate major changes in material living standards. However, these increases are not reflected in assessments of the household situation. Results are discussed against the background of rising expectations and social policy under democracy. It is concluded that income and employment poverty might dilute gains from higher material living standards. Further research using panel-study data is needed to demonstrate the lasting effects of service delivery on perceived quality of life in South Africa.

Introduction

An informed electorate is an absolute requirement of democracy. Therefore social indicators play an important role in communicating social progress to citizens and shaping directions for future development (Ferris, 2006; Holden, 2006). With this goal in mind, we initiated a research project to collect social indicators that provide citizens of Grahamstown East/Rhini (hereafter Rhini), a low-income suburb, with the information they need to hold their local government accountable.[1] Although

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[1]Academics based in developing countries have an obligation to contribute not only to basic research to expand the frontiers of knowledge, they are also morally obliged to conduct research

Rhini's research needs are served by the local university, to our knowledge, data from representative household surveys have not been collected to date. To fill this gap, we piggy-backed two questionnaire surveys on living conditions onto projects tied to a more specific research agenda. The information on living conditions has been made available to concerned citizens, fellow academics and their students, policy makers and planners.

Post-apartheid South Africa has made extensive use of social indicators to chart progress in alleviating poverty and delivering services to the people since the coming of democracy in 1994 (Møller & Dickow, 2002). The goal of 'a better life for all', the slogan coined by the ruling African National Congress at that time has since become a household word. While access to housing, clean water, electricity, sanitation and welfare has improved dramatically for the formerly disadvantaged sector of the population, it has not kept pace with population growth and rising expectations of the good life under democracy (Memela, Mautjane, Nzo, & van Hoof, 2008). According to Afrobarometer researchers, the concept of democracy is strongly associated with concrete material advantages in sub-Saharan Africa (Afrobarometer, 2002). South Africans, whose history of social exclusion has led to a strong sense of entitlement to their fair share of the good life, are no exception. Service delivery is the benchmark by which the poor assess whether social justice has been done.

Theoretical Considerations

This chapter reports a case study that explores the role of social indicators to monitor progress in Rhini. Our community study inquires into material levels of living, what Veenhoven (2000) refers to as the 'livability' aspect of quality of life. Veenhoven notes that good living conditions are often used as synonyms for quality of life and well-being. We take cognisance that Veenhoven's concept of livability embraces more than merely the material condition of the environment. Similarly, D'Agostini and Fantini (2008) acknowledge that improving the quality of living conditions is an acceptable strategy to improve quality of life. However, they argue that the two concepts of quality of living conditions and quality of life are distinct and give different views of the same domains of life in a given context. Taking these viewpoints, our study attempts to measure facts as well as residents' appreciation of their circumstances.

From a planning perspective, social indicators can play an important role in identifying citizens' needs and priorities and monitoring progress in achieving such priorities (Delhey, Böhnke, Habich, & Zapf, 2002; Dickes, Fusco, & Marlier, 2010; Vogel, 1994). They provide feedback on the state of the community to citizens, planners and decision makers. Our study focuses on the monitoring function of community studies and applies a set of objective and subjective social indicators that are

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in the public interest. In South Africa, funding for research is usually conditional on its proposed benefits to society.

capable of assessing quality of life from different angles (Campbell, Converse, & Rodgers, 1976; Diener & Suh, 1997; Marans, 2003; Sirgy, Gao, & Young, 2008; Veenhoven, 2002).

We also take into account the political context in our study. In developing countries, development has variously been equated with 'good change' (Gough & McGregor, 2007). In post-apartheid South Africa, better living conditions are associated with the humanity and the dignity formerly denied to the poor and disenfranchised. There is recognition that poverty encompasses both income and non-income poverty (Leibbrandt, Woolard, Finn, & Argent, 2010) and social exclusion is multidimensional (cf. Böhnke, 2002; Dickes et al., 2010; Noble, Wright, Magasela, & Ratcliffe, 2007). South Africa's Reconstruction and Development Programme, launched soon after the African National Congress was elected into government in 1994, aimed at addressing the social needs of formerly disadvantaged communities including their empowerment.

Outline of This Chapter

The following section describes the background to South African service delivery in the post-apartheid context of human rights and rising expectations. The research aims and hypothesis follow. The methodology section describes the survey design and the study site, and gives the respondent profile. The results section presents the 2007 profile of living conditions in Rhini and highlights the changes that have taken place between 1999 and 2007. Further analysis explores the relationship between objective and subjective indicators of living conditions, on the one hand, and the assessment of the household situation and subjective well-being, on the other. The discussion and conclusion seek to sum up the relative importance of service delivery for community and individual quality of life.

Social Policy and Service Delivery

Service Delivery as Entitlement

In the democratic era, South Africans consider decent living conditions as their right. South Africa's new Constitution, adopted in 1996, guarantees the right to have access to adequate housing and places the onus on the state to progressively realise this right (Sections 26(1) & 26(2)). Local government is tasked with ensuring the provision of services to communities in a sustainable manner and municipalities are to strive to achieve this objective within their financial and administrative capacity (Sections 152(1b) & 152(2)).

South Africans regard housing and basic services as entitlements in the democratic era. For example, a project using the 'socially perceived necessities approach' to define poverty and social exclusion found that *housing and electricity* were seen as top priorities for a decent standard of living in South Africa (Noble et al., 2007).

Weatherproof housing, a 'house strong enough to stand up to the weather' and mains electricity were voted 'essential' items for an acceptable standard of living by over 90% of participants in the 2005 and 2006 South African Social Attitudes Surveys (Noble et al., 2007; Wright, 2008). Importantly, there was considerable consensus among all sectors of the population on essential needs (Noble et al., 2007).

A recent inquiry into broader manifestations of poverty at local government level identified *basic services* as the most significant challenge in major urban areas of South Africa. In each of a series of workshops conducted in eight urban centres with councillors, officials and non-governmental organisations, basic services were voted as by far the greatest challenge (SAIRR, 2009b). Basic services covered housing, access to electricity, water and adequate sanitation.

Progress in Delivering Services Under Democracy

South Africa's Reconstruction and Development Programme has made progress in meeting popular expectations of 'a better life for all' since 1994. Table 13.1 shows that an increasing proportion of South African households has benefited from basic services including formal housing, electricity, piped water, refuse removal and telecommunications between 1996 and 2008.

Nonetheless, demographic trends pose a daunting challenge to the delivery of affordable housing and infrastructure (see Table 13.1, top band). According to the minister of human settlements, households residing in formal dwellings grew by 3 million between 1996 and 2007, while the population increased by 7.9 million,

Table 13.1 Change in proportion of South African households accessing services between 1996 and 2008

	1996	2008
Population	40,583,573	48,687,000
Total number of dwellings/households	9,059,571	13,448,000
Average household size	4.6	3.6
	%	%
Formal housing	64.0	75.0
Electricity for lighting	57.6	82.9
Piped water	79.8	88.5
Piped water in dwelling	43.9	43.8
Piped water on site/in yard	16.5	26.7
Flush or chemical toilet in dwelling, on site, off site	50.3	59.8
Refuse removal by authority	53.4	60.3
Telephone in dwelling/use of cellular phone	28.6	80.4

Source: Statistics South Africa, General Household Survey 2008, 2 September 2009; Census 1996; 1998 (SAIRR, 2009a, p. 545).

and the average size of households declined from 4.6 to 3.9 persons. During the same period, the number of informal settlements grew from 1.45 to 1.8 million (SAIRR, 2009a, p. 582). Although 2.8 million subsidised housing units had been built for poor households[2] between 1994 and 2009, the national housing backlog in 2009 stood at 2.2 million units, the same as in 1997 (SAIRR, 2009a, pp. 535–536).

Social Assistance and the Social Wage

South Africa is one of the few developing countries that offer generous social assistance. Unconditional cash transfers to the poor include social pensions, disability and child support grants. Some 13 million households in a population of approximately 49 million accessed an unconditional social grant in 2009. Social grants, in particular the old-age pension, are generally well targeted and have been shown to lift the poorest households out of the lowest income quintile (Leibbrandt et al., 2010; van der Berg, 1998). The social wage also covers school feeding programmes, free education in select primary schools and a public works programme. By 2008, government aimed to deliver free basic water to all households that have the necessary infrastructure to receive it (SAIRR, 2007, p. 391). As the economy gained strength during the late 1990s and the new millennium, social welfare in the form of free basic water and electricity has gradually been extended to poor households. Poor households are entitled to some 6,000 l of free water and 6,000 W of electricity per month to meet their basic needs. However, advocacy groups claim the amount of the free water should be higher to ensure health and a decent standard of living (Rabkin, 2009).

Unintended Consequences

As is often the case, South Africa's enlightened policy goals have had unintended consequences that limit their positive impact on social development and well-being. In the case of state-subsidised housing, quality has been sacrificed, when – in line with the government's equity policy – tenders for construction have been awarded to small contractors with limited experience drawn from the formerly disadvantaged sector of the population.[3] Users of free basic water and electricity have taken municipalities to court when their services are cut off once their basic allowance has

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[2]In 2009, the cost of one government housing subsidy was R50,000 (approximately US$6,700).

[3]In 2010, the Makana Municipality assured the residents of Rhini that the government had approved funding for rectifying deficient state-subsidised houses countrywide (van Wynegaard, 2010).

been achieved or they are forced to prepay for further services. Beneficiaries of free water also claim that the norm of 25 l per person per day is inadequate for a decent standard of living and should be doubled (Rabkin, 2009).

Ironically, the most successful programmes, the rollout of electricity and piped water to previously disadvantaged households may have backfired. The country has experienced problems in meeting the increased energy needs of an expanding economy. In 2006, South Africans experienced regular electricity cuts to conserve energy. As of 2010, consumers will pay more for electricity to support plans to improve future supplies. South Africa is also reaching the limits of its fresh water resources and water conservation is urgently needed to provide a growing population with access to piped water and water-borne sanitation. The country has always prided itself that its tap water is safe to drink. However, in recent years there have been reports of sewerage leaks into dams and rivers. Poor water quality is also linked to poor maintenance of treatment works. Up to 50% of municipalities did not have a qualified engineer on their staff in 2008 (Roodt & Eddy, 2010). In 2008, the media broke the news of the deaths of 78 Eastern Cape babies from diarrhoea. The deaths were initially attributed to exposure to contaminated water but further inquiries linked them to poor and negligent health services.[4]

Service Delivery Protest Action

Fifteen years into democracy, South Africans without access to services have become impatient. Given the strong sense of entitlement, ordinary citizens have become more vocal in voicing their discontent. Recent years have seen many protests, often violent, over the perceived slow pace of delivery of basic municipal services. The country's high unemployment rate has also fed into social unrest over delivery. Memela and colleagues (2008) observe that South Africa is highly politicised and there is a level of disgruntlement among poor people that is manipulated by political factions, which then leads to protests and riots over delivery. In 2004/2005 alone there were an estimated 881 illegal demonstrations and 5085 legal protests across 90% of municipalities.[5] In 2009, protests erupted in major urban centres following the fourth national government elections held in April. Housing and land issues were cited in media reports as causes in 28% of protests, while basic service delivery issues such as water, electricity, and sanitation accounted for 32% (Kgafela, 2010).

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[4]http://www.health-e.org.za/news/article.php?uid=20032095. Accessed 10 March 2010.

[5]According to the Centre for Development and Enterprise, a South African think tank, www.irinnews.org/report.aspx?ReportID=80741. Accessed 20 March 2009.

The Study

Historical Background

Rhini[6] has an estimated population of some 100,000[7]. The suburb, which was formerly zoned for black residence under apartheid, is situated on the eastern side of Grahamstown,[8] a small university town and education centre in Makana Municipality in the Eastern Cape Province. Rhini has experienced rapid growth since the coming of democracy to South Africa in 1994. Its first housing estate of Fingo Village was established in 1855 as a freehold settlement to reward Africans from the Mfengu tribe who fought on the side of the British in the eighth frontier war of 1850–1853. Since that time a series of adjoining housing estates has successively been developed to expand Rhini during the nineteenth and twentieth centuries (Manona, 1987). Unlike the residents of most dormitory suburbs for black workers, the residents of Rhini were not removed to outlying Bantustans or 'homelands' during the apartheid era. The most recent post-apartheid housing developments, popularly known as RDP houses, have taken place under South Africa's Reconstruction and Development Programme (RDP).

The Context of Social Change

Like other urban centres in South Africa, Grahamstown was caught up in the social transformation of society after 1994. In line with the ruling African National Congress's equity policy of 'a better life for all', the 1990s witnessed a boom in Reconstruction and Development housing construction. In the new millennium, the benchmark of progress was improved infrastructure such as electricity and piped water. By 2007, the next target to ensure the promised decent living conditions for all was sanitation – the replacement in urban areas of the bucket system with water-borne sewerage.

Gradually, Rhini residents have been offered a higher standard of living under democracy. Over 4,900 units had been added to Rhini's housing stock since 1994 – some 2,991 units in the new millennium. By 2007, upgrading of housing stock in both older and newer neighbourhoods had blurred the sharp distinction between formal and informal housing areas. A new racially integrated housing concept

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[6]The first study reported here conducted in 1999 referred to Grahamstown East/Rhini (spelt as 'Rini' as on the census and other maps). This chapter uses Rhini, the older popular name. The designation of Grahamstown East was meant to project the idea of a unified city in contrast to the apartheid city that typically separated residential areas by race.

[7]To date, Grahamstown population figures are only estimates. The South African census gives population figures for Rhini that are generally considered much too low. The Makana Municipality engineers use a figure one and a half times larger than the census figures while our household surveys have yielded estimates between the two (Møller, Manona, van Hees, Pillay, & Tobi, 2001).

[8]The largest town in Makana Municipality following the 2000 local government elections.

was in the planning stages.[9] The Makana Municipality had also embarked on an extensive programme to give residents access to electricity, piped water, and water-borne sewerage. However, reportedly hundreds of families living in Rhini's informal settlements have been waiting for houses since 1994 (Butana, 2008).

The Longitudinal Study

The chapter reports results of two comparative cross-sectional surveys conducted in Rhini. The first household survey (n862), representative of households in all neighbourhoods of Rhini, was conducted in May 1999. The second survey (n1,020), conducted almost 10 years later in November 2007, used an identical survey design and posed similar questions to residents on neighbourhood living conditions and material and subjective well-being (Møller, 2008).

Research Objective

The follow-up study aimed to explore whether living standards in Rhini had improved for the majority of Rhini residents and whether higher living standards were associated with a positive assessment of the household situation. South African quality-of-life studies have consistently shown that households with access to better services and a higher standard of living are more satisfied than others (Devey & Møller, 2002; Møller & Jackson, 1997; Møller, 2007).

The repeat study expected to find more positive evaluations of the household situation given the general rise in living standards related to greater housing security and access to infrastructure. However, an alternative hypothesis was also considered. The cost of living, in particular the price of food and energy, had risen dramatically between mid-1999 and late 2007, while rising expectations had fuelled discontent.

As noted earlier, the rollout of electricity in the 1990s was one of the most successful projects carried out under the Reconstruction and Development Programme. However, the demand for electricity soon outstripped supply as the country experienced more rapid economic growth in the new millennium. By the end of 2007 South Africa was caught up in an energy crisis caused by poor forward planning that resulted in regular electricity outages and an increase in the price of electricity. Ironically, the low-income households that were offered a better life with electricity in the 1990s were now being asked to cut back on consumption.

The rollout of piped water was also a success story for post-apartheid South Africa. As in many other municipalities, Rhini households which had gained access to piped water and flush toilets were now connected to the municipality's water supply system. However, in late 2006 there were problems with the water supply.

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[9]The proposed new neighbourhood is to be located between two formerly racially defined residential areas for African and coloured people under apartheid.

Residents of Rhini and other parts of town were without water for almost a week and the colour and taste of piped water suggested there was a problem with water quality.[10]

Given this scenario, the alternative supposition stated that higher living costs rather than higher living standards might determine perceived well-being of households. As a result of poor quality services, one might expect not a higher but a lower level of satisfaction in spite of a higher standard of living.

Methodology

Survey Design

The 2007 survey replicated the multistage systematic random sampling design used in the earlier 1999 survey that distinguished between 27 residential neighbourhoods on the basis of their historical tenure situation (Manona, 1987). For the 2007 survey, a number of the smaller neighbourhoods bordering each other were grouped together yielding a total of 23 neighbourhoods. All neighbourhoods were represented according to size in the sample. Starting from a randomly chosen point in each neighbourhood and moving systematically through the neighbourhood, every tenth household was approached for inclusion in the survey. Within households, an informant was selected by means of a Kish grid.[11] Respondents were interviewed in isiXhosa, the home language of the majority of residents, using a questionnaire schedule administered by trained interviewers. With few exceptions, all questions posed to respondents were closed-ended items for which a set of response options was supplied. Regular checks were applied to ensure quality.

Social Indicators

In line with best practice in community studies, we used a set of objective and subjective social indicators to compile a *community profile*. Objective indicators covered demographics, length of residence and residential mobility, housing type

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[10]The issue of water quality has come to the fore since the 2007 survey was conducted. In 2010, residents of Grahamstown were concerned that tap water was toxic and not safe to drink due to a dysfunctional chlorinator at one of the treatment plants. A spokesperson for Rhini complained of frequent water outages and brown sludge coming out of taps (Butana & Potter, 2010). In a public debate the municipality was accused of negligence, of not servicing treatment plants, and failing to regularly take samples of water for testing as required by law.

[11]Eligible for inclusion in the survey were adults over the age of 18 years who had lived in Rhini for at least 6 months during the past year. If the person selected was not available, an appointment was made to conduct the interview at a later time. Up to four visits were made to the household to interview the person selected to be the respondent. An interview was obtained in 97.9 % or 1,020 of the 1,042 households targeted to be in the sample.

and quality, homeownership, amenities in the home, access to neighbourhood services and welfare, income and employment, and crime victimisation. Subjective indicators included desire to move from the neighbourhood, and satisfaction with various aspects of neighbourhood quality of life.

Dependent variables: In line with the idea that quality of life is multidimensional and made up of a range of domains (Andrews & Withey, 1976), we applied summary measures of overall quality of life at the household and personal level. The assessment of the household situation served as our subjective indicator of progress at the household level: 'Compared to 1 year ago, how would you say things are for this household? Have things generally got better, stayed the same, or got worse for this household?' Satisfaction with life-as-a-whole served as the indicator of well-being at the individual level: 'Taking all things together, how satisfied are you with your life as a whole these days? Generally speaking, would you say you are very satisfied, satisfied, dissatisfied, or very dissatisfied?'

Respondent Profile

A total of 1,020 households was included in the realised sample. Some 68% of household members were eligible for selection including a significantly higher proportion of women (60%) than men (40%). The majority (73%) of respondents were women. The median age of respondents was 38 years. Just over half were single (52%) and a third were married (33%). The largest group (40%) had completed some secondary education and 18% had matriculated. Slightly less than 7% had received post-matriculation education and training. Only 8% had no formal schooling.

Results

Objective Indicators

Table 13.2 gives a profile of Rhini based on objective indicators. Regarding demographics, there were 4,245 persons enumerated in the 1,020 households in the survey. The mean age was 30 years. A higher proportion of household members were female and 50% of households were headed by a woman; 30% of households included an old-age pensioner. Household size ranged from between 1 and 17 with a mean of 4 persons. Some 62% of households included children aged 14 years or younger. At the time of the survey, children up to 14 years of age were eligible for a child support grant paid to the primary caregiver.[12]

One in two householders had lived in their present neighbourhood for 11 years or more. The majority of houses were built of brick or cement block. Some 16%

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[12]An age extension to 18 years, to be introduced over several years, was announced in 2008.

Table 13.2 2007 Community profile: objective indicators of living conditions

	% households
Female head	50
Old-age pensioner in household	30
Length of residence in area	
Under 5 years	28
20/21 years +	33
Estimated median years = 11	
Former residence	
Never moved	15
Formal housing area in Rhini	18
Informal housing area in Rhini	30
Outside Rhini	37
Housing type	
Formal: brick/cement block	72
Traditional mud and pole	16
Informal: self-built shack	12
Housing quality	
Roof leaked in past year	51
House was flooded in past year	42
Subsidised RDP housing	34
Homeowner	87
Fenced property	75
Vegetable garden	26
Amenities in the home:	
Electricity	83
Radio	71
Television	69
Car	10
Refrigerator	58
Music system	40
Telephone/cellular phone	65
Personal computer	3
Toilet system	
None	4
Bucket	6
Pit latrine	24
Ventilated improved pit (VIP) latrine	2
Flush	64
Piped water	
None	3
200 m + away	6
Within 200 m (street tap)	10
On site	54
Inside dwelling	27
Subsidised services:	
Recipient of free basic water	16
Recipient of free basic electricity	25

Table 13.2 (continued)

	% households
Neighbourhood services:	
Street lights	53
Tarred roads	27
Graded gravel roads	74
Refuse removal	87
Household income in Rand	
R500 per month	16
R501–R1,500 per month	54
R1,501–R3,000 per month	23
R3,001 –	7
Median income (Rand)	R1,100
Median income needed to get by (Rand)	R2,900
Select income sources:	
Formal job	35
Casual job	32
Old age pension and disability grant	47
Child support grant	44
Collecting/selling	2
Rent	3
Moneylenders	6
Begging	3
Employment during National Arts Festival in past 5 years	10
Assistance if in financial difficulties from	
Relatives	40
Friends, neighbours	17
Moneylenders	24
Stokvel, savings clubs	1
Employer	6
People at work, fellow church goers	circa 4
No assistance required – no money problems	7
Crime victimisation in past year	
Burglary/housebreaking	23
Serious crime	12

n1,020, rounded percentages

of housing stock consisted of traditional wattle and daub structures and 12% of informally built shacks. RDP housing units accounted for one-third of all housing and 45% of formal housing stock in 2007. Over half of the householders surveyed reported that the roof of their house had leaked in the past year; 42% that their house was flooded in the past year. Mainly occupants of traditionally built houses and shacks reported leaking roofs and flooding. RDP houses were more likely to have been flooded than non-RDP houses (53% versus 36%).

Although three-quarters of properties were fenced, only a quarter of households grew vegetables – mainly for own use. Pensioner households and recipients of welfare in the form of food parcels were more likely to grow vegetables. Over four in

five homes in Rhini were electrified. The vast majority of households had access to amenities including a radio, television set, and a telephone or cellular phone. Over half had a refrigerator. Few households had a motor car or a personal computer. In 2007, the flush toilet was the most commonplace toilet system serving 64% of households. Nine in ten households had access to piped water within 200 m from the home.[13] Some 16% of households reported that they received free basic water and 25% reported they received free basic electricity. Access to free basic water was significantly higher than average among occupants of RDP houses (23%).

The majority of households had access to refuse removal. Not all neighbourhoods had street lighting and tarred roads.

The median household income in November 2007 was Rand 1,100 per month. In contrast, half of the surveyed households stated they needed twice that amount, R2,900 or more, to make ends meet or 'get by'.[14] The two most important sources of household income were wage income and government transfers in the form of social grants.[15] About a third of households received income from regular jobs (35%) or casual jobs (32%). Some 70% of Rhini households were receiving social assistance from the state in the form of non-contributory social grants. Regular wage earnings generally boosted income levels. The highest income group (R2,000–R7,000+ per month) comprised eight times as many households with a formally employed person (32%) than households without (4%); 63% of households with no person employed were in the lowest income group earning up to R1,000 per month. The National Arts Festival which has been held annually for over 30 years in Grahamstown is a significant income earner and source of local pride for the town (Snowball, 2008). Only one in ten households reported that they had earned an income during the festival in the past 5 years.

Male-headed households were more likely to depend on wage income while female-headed households tended to rely more on income from social grants. Some 77% of households in which no one was employed full-time received a social grant; 9% of non-grant households stated they made an income from begging. Households experiencing money problems were most likely to turn to relatives for assistance but almost a quarter relied on moneylenders. Only 7% of households reported they had never or seldom experienced money problems.

Over one in five households (23%) reported a break-in or burglary in the year leading up to the survey. In 12% of cases, a household member was the victim of a serious personal crime such as murder, rape, or assault. In total, 63 households or 6% of surveyed households experienced both a housebreaking and a serious crime in the past year.

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[13] Access to piped water within 200 m conforms to RDP norms for a minimum standard of living.

[14] The survey items read 'Approximately what is this household's average monthly income?' and 'What monthly income does this household need to get by?' 13 income categories were supplied.

[15] The old-age pension and the disability grant were already well established in the last century. The child support grant introduced under democracy in 1998 aimed to support poor families to provide adequate nutrition for children. It 'follows the child' and is paid to the primary caregiver (Lund, 2008).

Subjective Indicators

Subjective assessments of community, household, and personal quality of life are given in Table 13.3. Regarding satisfaction with the neighbourhood,[16] close on three-quarters of householders said they did not want to move from their neighbourhood. Almost all were satisfied that their refuse was removed regularly. However, only one in two reported satisfaction with the water supply. About a third was satisfied that their household received value for rates paid. Concerning local governance, only 35% of householders were satisfied that their ward councillors reported back to residents regularly.

Regarding social cohesion and neighbourliness, substantial majorities of householders were satisfied that people in their area are friendly, helpful, and trustworthy. However, 67% were dissatisfied with the crime situation ('a lot of crime') in their area, and 60% were dissatisfied about stray animals.[17] The experience of criminal victimisation was associated with a negative appraisal of the crime situation.

Just under a fifth of householders (19%) stated that their situation was better than 1 year ago while 56% reported that 'things are generally worse'.[18] Some 44% indicated they were satisfied with their lives as a whole[19] .

Table 13.3 Subjective indicators of community, household, and personal quality of life

	%
Do not wish to move from neighbourhood	74
Very satisfied or satisfied with neighbourhood issues [a]	
People are friendly	90
People are helpful	84
People trust neighbours	77
Refuse is removed regularly	95
No interruptions in water supplies	50
Ward councillors report back regularly	35
Residents get value for their rates	34
No stray animals	40
Not a lot of crime	33
Assessment of household situation	
Better than last year	19
Same as last year	25
Worse than last year	56
Satisfaction with life-as-a-whole	
Very satisfied/satisfied	44

n1,020, rounded percentages
[a]See also Appendix, Table 13.7

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[16]See the Appendix Table 13.7 for details on ratings of neighbourhood satisfaction.

[17]Stray animals reportedly trample vegetable gardens that are not fenced and cause road accidents.

[18]The household situation was rated as 'better' than last year by 18.8%, the 'same' by 24.7% and 'worse' by 56.5%.

[19]Assessment of satisfaction with life as a whole was 'very satisfied' (4.2%), 'satisfied' (40.1%), 'neither satisfied nor dissatisfied' (19.0%), 'dissatisfied' (28.5%) and 'very dissatisfied' (8.1%).

The majority (57%) of the lowest income earners reported a worse household situation compared to only 10% in the highest household income group. Access to wage income, in particular, played a significant role in determining whether the household situation was regarded as having improved or deteriorated over the past year. In households where things were seen to have got better, the response to the question on main sources of income typically made first mention of a regular job followed by social grants. In contrast, the reportedly worse-off households relied more exclusively on social grant income. Although the city's National Arts Festival was a source of pride to young residents of Rhini in an earlier study (Møller, 2003), householders who had gained financially from the festival in the past 5 years were no more satisfied with their household situation than others. Householders' experience of crime also appeared to influence the evaluation of the household situation: a higher percentage of respondents in households that reported a serious crime in the past year stated their situation had deteriorated compared to non-victim householders (69% versus 52%).

Changes in Living Conditions and Quality of Life Between 1999 and 2007

Table 13.4 presents comparable social indicators from the 1999 and 2007 surveys. A number of statistically significant social changes in living conditions, lifestyles, and opportunities are evident from the social indicators.[20] Of consequence are also the indicators that show no change. A brief thematic overview of trends and progress achieved by 2007 follows.

Greater Residential Stability in Spite of Growth

Households had become more settled by 2007. Home ownership had increased from 70 to 87% over 8 years. Half of Rhini households reported having lived in their neighbourhoods for 11 years in 2007 compared to 7 years in 1999. Twice as many households had lived in the same neighbourhood for over 20 years in 2007 compared to 1999. Significantly more householders wished to stay where they were residing in 2007: over 7 in 10 householders compared to less than 6 in 10 in 1999.

Similar percentages of households, 15–16% in 1999 and 2007, reported never having moved in the past. In-migration from the surrounding farms appeared to be fairly stable at between 11 and 14.5%. By 2007, Rhini appeared to be attracting people from farther afield than in the past. Approximately 17% of in-migrants came from other areas of the Eastern Cape in 2007. However, there appeared to be less internal residential mobility within Rhini's formal housing areas in 2007 than in 1999.

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[20]Chi-square was used to test for differences in the frequency distributions of social indicators between the 1999 and 2007 surveys. Bonferroni adjustment to the level of significance ensured that the overall significance level of multiple comparison tests did not exceed 5%.

Table 13.4 Comparative living conditions in Grahamstown East/Rhini in 1999 and 2007

	May 1999	November 2007	Major change X[a]
Total households in the survey	n862	n1,020	
Percentages in the table are based on total households			
Household size (mean)	5.25 persons	4.17 persons	X
Length of residence in area (%)			
Under 5 years	42	28	
20/21 years +	15	33	
Estimate: median years	7 years	11 years	X
Former residence (%)			
Never moved	16	15	
Formal housing area in Rhini	36	18	X
Informal housing area in Rhini	31	30	
Grahamstown/Makana	3	5	
Nearby farm	11	14.5	
Other Eastern Cape	2	17	*X*
Outside Eastern Cape	0	0.5	
Don't want to move (%)	57	74	X
Housing type (%)			
Formal: brick/cement block	48	72	X
Traditional mud and pole	35	16	X
RDP housing (%)	20	34	X
Homeowner (%)	70	87	*X*
Fenced property (%)	78	75	
Vegetable garden (%)	51	26	X
Amenities (%)			
Electricity	76	83	X
Radio	84	71	X
Television	72	69	
Car	13	10	
Refrigerator	54	58	
Music system	43	40	
Telephone/cellular phone	32	65	X
Personal computer	1	3	
Toilet system (%)			
None	4	4	
Bucket	44	6	X
Pit latrine	24	24	
Ventilated improved pit (VIP) latrine	12	2	
Flush	15	64	X
Piped water (%)			
None	–	3	
200 m + away	9	6	
Within 200 m (street tap)	25	10	X

Table 13.4   (continued)

	May 1999	November 2007	Major change X^a
On site	60	54	
Inside dwelling	5	27	X
Services (%)			
Street lights	66	53	X
Tarred roads	31	27	
Graded gravel roads	70	74	
Refuse removal	81	87	
Public telephone	59	–	
Select income sources (%)			
Formal job	58	35	X
Casual job	32	32	
Collecting/selling	9	2	
Rent	5	3	
Old age pension and disability grant	42	47 (estimate)	
Child support grant	9	44	X
Moneylenders	4	6	
Begging	1	3	
Assistance if in financial difficulties from (%)			
Relatives	52	40	X
Friends, neighbours	8	17	X
Moneylenders	16	24	X
Stokvel, savings clubs	4	1	
Employer	8	6	
People at work, fellow church goers	circa 3	circa 4	
No money problems (%)	8	7	
Household income in Rand (%)			
R500 per month	43	16	
R501–R1,500 per month	46	54	
R1,501–R3,000 per month	9	23	
R3,001 –	1	7	
Median income (Rand)	R594	R1,100	X
Income needed to get by (Rand)	R2,077	R2,900	
Old-age pensioner in household (%)	35	30	
Female head (%)	48	50	
Reported household situation (%)			
Better than last year	48	19	X
Same as last year	22	25	
Worse than last year	28	56	X
Victimisation (%)			
Burglary/housebreaking	17	23	
Serious crime	11	12	

[a]X indicates significant difference ($P < 0.001$ using Bonferroni adjustment for multiple comparisons)

The vast majority of Rhini residents were now formally housed and traditional housing was on the decline. Formal housing had increased from 48 to 72% over the 8-year period. Traditional housing had declined from 35 to 16%.

Although about three-quarters of properties were fenced at both times, vegetable gardening had declined. There were twice as many vegetable gardens in 1999 than in 2007.[21]

Smaller Households and Choice in Living Arrangements

Households had become smaller. The average household size in 2007 was four persons (4.17) compared to the five persons (5.25) recorded in the 1999 survey. Although household composition was not recorded in the 2007 survey, the new housing stock in Rhini likely had increased choice in living arrangements. Close on 3,000 new housing units had been built since 1999 in Rhini. The trend towards smaller households probably reflects a national trend in lifestyles facilitated by the RDP housing construction boom. In Rhini, over one-third of housing stock was RDP housing in 2007 compared to one-fifth in 1999.

Improved Standards of Living: More Electricity, Piped Water, and Water-borne Sewerage

The most obvious sign of improved standards of living was the increase in access to electricity, piped water, and water-borne sewerage. The postscript to the 1999 report on living conditions correctly predicted that 'in future, water-borne sewerage and piped water in the dwelling may well become the norm in most housing areas' (Møller et al., 2001 p. 29). Flush toilets and piped water, at least on site if not inside the dwelling, had indeed become the norm in all of Rhini by 2007.

In 2007, some 83% of households had access to electricity compared to three-quarters in 1999. However, access to electricity appeared not to have translated into a wider range of amenities in the home. For example, a slightly smaller percentage of households had television in 2007 than in 1999.

The South African government had committed itself to eradicating the hated bucket toilet system by the end of 2007. This target was not quite met in Rhini at the time of the survey owing to technical problems. Nonetheless, only 6% of surveyed households were still on the bucket system in November 2007, down from 44% in May 1999. Flush toilets were available in 64% of dwellings in 2007 compared to

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[21]This is a surprising finding given the many local efforts by government and nongovernmental organisations to promote food gardens to boost household food security and nutrition in a time of rising food prices and the AIDS epidemic. It is possible, although no proof has been found to date, that food gardening is stigmatised in that it serves as a marker of HIV-infection and poverty. HIV-positive people are encouraged to grow and eat vegetables to boost their immune systems.

only 15% in 1999. In 2007, fewer households were collecting water from street taps and more households had access to water in the dwelling.

Infrastructure Needs Increase as Rhini Expands

The rapid extension of Rhini had resulted in slightly more households living in areas with a lower level of services. For example, street lighting and tarred roads were lacking in some of the newer areas. However, a higher proportion of households reported their refuse was removed in 2007 than in 1999: 87% compared to 81%. In 2007, the level of satisfaction with refuse removal services was very high compared to other ratings.

Fewer Jobs: Households Rely on Diverse Sources of Income that Still Do Not Meet Needs

Significantly fewer households reported wage income from formal jobs in 2007. The proportion of households depending on state old-age pensions and disability grants appeared to have remained about the same over the 7-year period, but the child support grant, first introduced in April 1998, had become an important source of income for over 4 in 10 Rhini households (44%) – up from 9% in 1999.

If in financial difficulties, Rhini households were more willing to rely on assistance outside of the family than in the past. Reliance on friends and neighbours had increased twofold since 1999, and reliance on moneylenders increased from 16 to 24%. A similar proportion of households, some 7–8%, stated they had no money problems in 1999 and 2007.

The median income earned by Rhini households increased from R594 in 1999 to R1,100 in 2007 in line with the increase in cost of living. The difference between reported household income and the income needed to 'get by' decreased somewhat. In 1999, the average Rhini household needed 3.5 times its regular income just to get by. In 2007, it needed 2.6 times its regular income to meet its needs.

High Crime Levels Persist

The reported incidence of serious crime remained fairly stable over time but the incidence of housebreaking increased somewhat. In 2007 twice as many householders reported a housebreaking (23%) than a serious crime (12%).

Negative Evaluation of Living Conditions in Spite of Improvements

In 2007, the largest proportion of households, over one in two (56%), thought their situation had worsened over the past year. Less than a fifth reported the household

situation had improved. In 1999 the largest proportion of householders (44%) was upbeat and stated that things were better than a year ago.

Evaluation of Well-being in 2007

The unexpected negative assessment of the household situation in 2007 in spite of the improvements to living standards in Rhini over the past 8 years called for further analysis.

   We conducted multinomial regression analysis to explore the relative impact of access to services on the evaluation of the household situation and personal well-being. The dependent variable used for the first regression was the evaluation of the household situation with outcomes 'better than last year', 'same as last year' and 'worse than last year'. Predictors were income and employment, and service delivery relating to housing, electricity, water, sanitation, and telecommunications. In addition, we included the household's experience of a break-in in the past year. Results from a forward stepwise regression in Table 13.5 indicate that employment and income factors play an important role in the positive assessment of the household situation. Employment was the first variable to be entered into the equation in Table 13.5. In the final model, employment was the most important factor contributing to a positive assessment of the household situation; further significant factors included service delivery items (toilet facility, telecommunications, and an uninterrupted water supply) and income.

   A second multinomial regression was run with subjective well-being as the dependent. Predictors were satisfaction with neighbourhood issues including friendly, helpful, and trustworthy neighbours, refuse removal, uninterrupted water supply, value for rates, no stray animals, an acceptable level of crime, and responsive ward councillors. A service delivery item, satisfaction with an uninterrupted water supply, was entered into the equation on the first step and was also the most significant positive factor in the final model (Table 13.6).[22]

Discussion and Conclusions

Social indicators are generally regarded as useful tools to monitor progress in living conditions which affect community quality of life and they give voice to citizens to hold their local government accountable. However, as many

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[22]Noteworthy is that the objective measure of crime (a housebreaking in the past year) and the subjective satisfaction with the crime situation in the neighbourhood (not a lot of crime in the area) were crowded out by factors in the regression analysis related to livelihoods and living standards. Similarly, an earlier study of criminal victimisation in the Eastern Cape found that crime did not appear to negatively influence subjective well-being which suggests that many South African households have become resilient and have adapted to relatively high crime levels in their communities.

Table 13.5 Multinomial regression model on household situation better compared to past year

Forward stepwise	Predictors	Chi-square	Significance $P <$
Step 1	A household member is employed full time	69.94	0.000
Step 2	Flush toilet facility	24.75	0.000
Step 3	Household has telephone/cell phone	15.55	0.000
Step 4	No interruptions in water supply	10.98	0.001
Step 5	Household average monthly income	8.68	0.013
Step 6	Dwelling has been flooded in the past year	6.41	0.011
Step 7	RDP house	5.09	0.024
Step 8	Household receives social grant	2.01	0.157
Step 9	Free basic electricity	1.15	0.283
Step 10	House break-in	0.88	0.347
Step 11	Water source piped in house	0.31	0.579
Step 12	Formal house	0.12	0.726
Step 13	Electricity	0.10	0.757
Step 14	Roof leaked in past year	0.01	0.916
Final model	*Predictors*	*Beta*	*Significance $P <$*
	A household member is employed full time	0.75	0.000
	Flush toilet facility	0.46	0.002
	Household has telephone/cell phone	0.45	0.002
	No interruptions in water supply	0.44	0.001
	Household average monthly income	0.57	0.010
	Dwelling has been flooded in the past year	–0.36	0.008
	RDP house	0.34	0.024

Likelihood ratio Chi-Square $= 144.1$, df $= 8$, $P < 0.000$

quality-of-life researchers have observed (Vogel, 1997), change in some domains of life is often too sluggish to register in social indicators in the shorter term. Changes in access to housing and infrastructure are likely to show up during a shorter period of time (see Table 13.1).

The repeat survey of living conditions and perceived quality of life conducted in Rhini in 2007 after an 8-year interval identified a number of significant changes in the living conditions of residents. Given these advances, the negative evaluation of the household situation was an unexpected result. Other studies of living conditions in South Africa have regularly found that South Africans whose living conditions have improved are more satisfied than dissatisfied with their lot (Møller, 2007). In the case of Rhini residents, it appears that lack of employment opportunities and incomes may be the main cause of their negative evaluation of progress in 2007 (see Table 13.5). It appears that the struggle to earn a livelihood may overshadow some of the benefits from service delivery.

Table 13.6 Multinomial regression model on satisfaction with life-as-a-whole

Forward stepwise	Predictors	Chi-square	Significance $P <$
Step 1	Reliable water supply	40.6	0.000
Step 2	No stray animals	29.2	0.000
Step 3	Helpful neighbours	18.4	0.001
Step 4	Value for rates	17.9	0.003
Step 5	Regular refuse removal	14.9	0.002
Step 6	Responsive ward councillors	11.8	0.008
Step 7	Trustworthy neighbours	9.5	0.024
Step 8	Friendly neighbours	6.6	0.087
Step 9	Acceptable crime level	5.2	0.154
Final model	*Predictors*	*Beta*	*Significance $P <$*
	Reliable water supply	2.17	0.000
	No stray animals	−1.46	0.000
	Helpful neighbours	2.13	0.009
	Value for rates	1.66	0.004
	Regular refuse removal	−1.51	0.030
	Responsive ward councillors	1.07	0.064
	Trustworthy neighbours	0.74	0.238

Likelihood ratio Chi-Square = 145.6, df = 21, $P < 0.000$
See Appendix Table 13.7 for full description of predictors

The negative perceptions of the household situation present a new challenge for future research. The country's Reconstruction and Development Programme has focused mainly on addressing the backlog in housing and infrastructure in the formerly disadvantaged sector of the population. Macroeconomic policy has ensured fiscal discipline. Until recently, inflation has been kept in check. However, economic growth has not produced sufficient employment for a growing population and by late 2007; the cost of living was rising steadily. Since that time South Africa also faces the challenge of mitigating the negative impact of the global economic crisis.

To date, habituation to better standards of living, the hedonic treadmill effect (Easterlin, 1995), has not been in evidence in South Africa, judging from cross-sectional national survey data. Within our sample, financially better-off households tended to be more positive about their household situation. However, the average low-income household was more negative in its assessment. Results from the regression analysis suggest that livelihoods rather than access to services may be more effective enhancers of quality of life during a period of rising living costs. Thus, our survey findings tend to support the alternative supposition that unaffordable higher living standards might depress rather than enhance quality of life in the general population. Stated differently, income and job opportunities may be as important or more important to householders than access to services.[23]

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[23]Earlier studies of quality of life in South Africa have consistently found that the level of satisfaction with income and job opportunities is lower than all other domains (cf. Møller & Schlemmer, 1983, 1989; Møller, 1998).

Noteworthy is that satisfaction with a reliable water supply contributed significantly to well-being at both the household and personal level in our regression analyses (see Tables 13.5 and 13.6). Since 2007, residents of Makana are not only concerned about interruptions in their water supply, they also worry about how safe it is to drink tap water. While better-off households may choose to buy bottled water or to collect water from a spring outside Grahamstown, poorer households in Rhini with limited income and no transport do not have such an option. Thus, income again emerges as the critical factor in overcoming service-delivery shortcomings.

A major limitation to our understanding of the social dynamics involved in shaping material and perceived quality of life in South Africa over time has been the reliance on cross-sectional studies. In our Rhini study, we were only in a position to compare two snapshots of quality of community life rather than following individual households over the 8-year period. Future community research based on panel studies of South African households is needed to determine the impact of improved standards of living on perceptions of progress and perceived well-being over time.

Since our second survey was conducted in late 2007, service delivery in Rhini continues to be a contentious issue as is the case throughout South Africa. The mayor in his state-of-the-municipality address promised the Makana community that 2010 would focus on service delivery. A number of crucial service-delivery issues would be attended to in Rhini including installing water-borne toilets in areas still operating on the bucket system. The housing upgrade projects in the transit camp and in an older neighbourhood, which had been delayed for technical reasons, would soon commence. The municipality had received approval to build the new houses to a higher standard (Mgaqelwa, 2010, p. 3) and defective RDP houses would be repaired (Van Wynegaard, 2010). The municipality is also being held to account for the quality of the water supply. Only an update on our 2007 community study will tell whether these and other improvements in service delivery are also reflected in the perceived quality of life of the citizens of Rhini in future.

Appendix

Table 13.7 Neighbourhood quality of life[a]

	Very satisfied (%)	Satisfied (%)	Dissatisfied (%)	Very dissatisfied (%)
People in this area are friendly	16.2	74.0	8.2	1.6
People in this area help each other without having to be asked	14.7	69.5	14.1	1.6
People trust their neighbours	13.6	63.5	19.6	3.3
Refuse is removed regularly	23.4	71.9	3.9	0.8
There have been no interruptions in water supplies in 2007	8.4	42.0	40.4	9.3
Ward councillors report back regularly	3.0	31.7	40.0	25.4
Residents get value for their rates	2.3	31.5	49.1	17.0
There are no stray animals	5.2	34.6	38.0	22.2
There is not a lot of crime in the area	4.1	29.0	32.5	34.4

[a]The survey questions read: '*How satisfied is this household with how things are in this area of Grahamstown East/Rhini? Are you very satisfied, satisfied, dissatisfied or very dissatisfied that . . .?*'
Rows add to 100% or nearest. n1,020

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Chapter 14
Community Indicators in Action: Using Indicators as a Tool for Planning and Evaluating the Health and Wellbeing of a Community

Melanie T. Davern, Sue West, Sally Bodenham, and John Wiseman

Abstract Community indicators are summarized or aggregated statistics that include broad measures aimed at measuring the progress of a community but community indicator projects are often criticized for a lack of direct policy and planning actions. This chapter introduces *Community Indicators Victoria*, a community indicators project located within a southern state of Australia, and describes a successful collaboration with a local government authority in the development of a 4-year Municipal Public Health and Wellbeing Plan. The chapter describes a practical case study example of how community indicators can be used to develop informed, engaged and integrated community planning.

Introduction

In the last 25 years there has been a proliferation of community indicator projects internationally. More than 200 local community indicator projects have been reported across the United States (Dluhy & Swartz, 2006) and the Community Indicators Consortium (2009) reports an additional 24 projects across Canada, Columbia, Germany, New Zealand and the United Kingdom. In Australia, 5 out of 7 states have adopted the use of community indicators at state government level and legislation has mandated that local governments in Victoria must include indicators in planning and policy development. At the national level, the Australian Bureau of Statistics has developed the Measuring Australia's Progress publication which includes indicators or statistical evidence that measure the progress of Australian society (Australian Bureau of Statistics, 2009). The increase in indicator projects in recent years can be explained by the influences of evidence-based policy and local

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governance in public administration theory and practice (Hezri & Dovers, 2006, 2009). The clear logic for introducing indicator projects is based on the premise that better information will result in better long-term management and planning (Holden, 2009). They are introduced as objective knowledge which is thought to be able to override the complex and political nature of public policy decision making.

Indicators are an important tool in these environments and this chapter provides a case study of how a community indicator project can be applied to create knowledge for planning and policy. This is demonstrated by describing how an Australian community indicators project was used to devise a municipal public health plan and argues that the conceptual utilization of indicators can have both instrumental and communicative value in the planning and policy process (Hezri & Dovers, 2006). The chapter concludes with a summary of key lessons learnt from the process and how these should be considered in planning future local community indicator projects.

What Are Community Indicators?

Community indicators are aggregated or summarized statistics of social, economic and environmental issues relevant to a particular geographic area. Indicators are different from raw data because they are abbreviated, analysed statistics as described in the information chain summarized by Briggs (1998, p. 99) in Fig. 14.1. They are broad measures designed for specific purposes such as: to assess the progress of society or the wellbeing of a community; spotlight issues or trends affecting a particular area or population; describe conditions or problems; highlight issues of importance to a community; simplify complex issues within a big-picture approach; measure quality of life issues; identify trends and future plans; clarify goals; simply communicate data; and, stimulate discussion about future actions (Briggs, 1998).

Community indicators are designed to highlight issues of importance to a community and can include a broad range of measures and evidence from administrative and survey-based data. Sources often include data collected by national statistical offices and it has been argued that the separation of those who collect the data from those who use the data increases the credibility of an indicators-based project (Briggs, 1998). It is for these reasons that Dluhy and Swartz (2006) recommend that indicator projects are hosted by neutral conveners where the interests of all parties involved in the project can be met through a consensus-building process.

The term 'community' in community indicators is used for mixed purposes by researchers and practitioners but generally denotes a place focus, or an elevated interest in issues most relevant to residents and stakeholders in a particular geographic location. In contrast, Holden (2009) defines community as a group of people with a common interest and does not specifically refer to location. Wide variation is not only common in terminology definitions, but also in the community indicator projects themselves because the work is often tailored to the issues most relevant to a community. Relevance within a community is essential for a community indicator project to be successful.

Measurement

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Data

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Aggregation

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Statistics

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Analysis

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Indicators

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Interpretation

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Decision
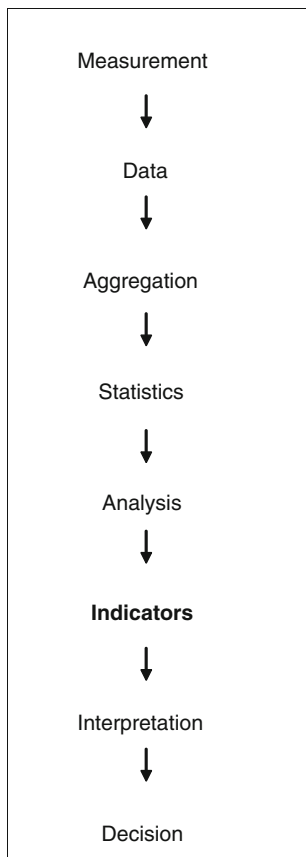
Fig. 14.1 The role of indicators in the information chain (Briggs, 1998)

Characteristics of Successful Community Indicators

All community indicator projects should be guided by an overarching ideology or conceptual framework (Dluhy & Swartz, 2006). Indicators should be designed with a purpose in mind according to a theoretical standpoint but must also be relevant to the population and the area where wellbeing is being measured. This has lead to great variation in indicator frameworks developed for communities and a major criticism of the field (Holden, 2009). However, participatory citizen involvement is a crucial factor in determining the success of a community indicator project (Swain, 2001) and this inevitably leads to the inclusion of indicators specific to a local area. Participation has come to mean a number of different things for community indicator projects including citizen involvement in the following activities: discussions about what constitutes progress or wellbeing; the identification of key indicators and measures; and, the collection and analysis of qualitative and quantitative data (see

for example the Council of Europe). These bottom-up models of community indicators are associated with community empowerment (Laverack, 2008), and allow citizens and communities to decide on the issues of concern to their wellbeing.

The development of an indicator framework must try to balance these competing tensions of indicators being guided by theory, yet relevant to a local area while at the same time being able to be replicated and compared to other areas. If a community indicator project involves multiple communities it also enlarges the sphere of influence for the indicator system (Holden, 2009). This forms part of Holden's 'participatory deliberate democracy' (2009, p. 432) which also suggests that more communities involved in an indicator system will increase the power of the results, thus increase the chance of policy changes occurring. This leads to the other major requirement of successful community indicators; they must be able to be influenced by government policy and planning for them to be useful measures of wellbeing (Brugmann, 1997; Dluhy & Swartz, 2006; Hagerty et al., 2001; Holden, 2009). Indicators that are grounded in causal theory and connected to policy are able to connect knowledge to action (Dluhy & Swartz, 2006). If community indicators cannot be shaped by changes in public policy, they should not be included in a community wellbeing framework.

A number of additional factors have also been suggested for indicators to be valid and useful influences of public policy. In a Delphi review of quality of life indexes, Hagerty et al. (2001) recommend that indicators used for public policy should also meet a number of additional criteria. First, indicators should be clear, reliable and valid measures sensitive to changes in public policy. Second, indicators should help public policy makers assess wellbeing at all different levels of aggregation ranging from individual, community, state, national and international levels. Third, indicators should be measured according to time series data for monitoring change within populations and areas, and enable future planning. Fourth, indicators should include both objective and subjective measures because there is often low correlation between these types of indicators. Quantification and a reliance on metrics is common in today's society (Giridharadas, 2009) and care should be taken when including measures to assess the progress of society. The importance of this issue is reflected in the French Republic's creation of the Commission on the Measurement of Economic Performance and Social Progress (Stiglitz, Sen & Fatoussi, 2009). The Commission was established to identify the limits of standard economic indicators such as Gross Domestic Product and consider alternative indicators of social progress. Non-standard subjective indicators of wellbeing are an important addition to any framework of community wellbeing and should be included in all community indicator projects. All of these important factors identified by Hagerty et al. (2001) must be addressed in the development of any community indicator project and these criteria have been central to the development of Community Indicators Victoria.

Introducing Community Indicators Victoria

Community Indicators Victoria (CIV) was established in 2006 at the McCaughey Centre, School of Population Health, at the University of Melbourne and introduced

local community wellbeing indicators to the state of Victoria in southern Australia. The project was developed to introduce local community wellbeing indicators to all municipalities across Victoria and to facilitate their use as a tool for informed, engaged and integrated community planning and policy making.

CIV resulted from a pilot project commissioned by VicHealth, the Victorian Health Promotion Foundation (Wiseman et al., 2006). The initial project was a response to the challenges facing the Victorian local governments who had invested increasing effort in the use of community wellbeing indicators to support community planning and reporting. While some promising models had developed, progress was hampered by a lack of relevant local-level data sets and inadequate capacity to effectively link indicator tools with planning and policy making.

The outcome of the pilot project was a comprehensive framework of community wellbeing including a broad range of indicators to identify and measure wellbeing according to the five broad domains of social, economic, environmental, democratic and cultural wellbeing. The five major domains included in the framework are Healthy, Safe and Inclusive Communities; Dynamic, Resilient Local Economies; Sustainable Built and Natural Environments; Culturally Rich and Vibrant Communities; and Democratic and Engaged Communities. These domains were agreed upon after extensive consultation and collaboration over an 18-month period with numerous representatives from academia, community organizations, local government and state government departments. A more detailed list of the indicators included within policy areas and domains is provided in Appendices 1–5. In total, 72 indicators of community wellbeing are currently included in the framework.

Indicators included in CIV have been calculated from two major sources of data: administrative data and survey data. Existing administrative data includes those collected by federal, state and local government departments including the Australian Bureau of Statistics Census based data. There were no relevant administrative data sources for a number of indicators included in the CIV framework and this lead to the development of the new CIV survey. The statewide survey ensured that a significant proportion of indicators included in the framework are subjective in nature, unlike the majority of those collected from administrative sources. The survey enabled data collection of highly relevant and topical issues and included topics such as subjective wellbeing, food security, water usage, citizen engagement, transport limitations and arts participation. The CIV Survey was designed and successfully piloted in 2006 and data collection began in early 2007.

The CIV survey was conducted across all 79 Victorian local government areas (LGA) with adults aged 18 years or older and was administered as a Computer-Assisted Telephone Interview. A social research company was contracted to complete the data collection and households were randomly selected within each area using Random Digit Dialing. This procedure uses 'seed numbers' from an earlier version of the electronic white pages. The final two digits of these phone numbers are removed and two new numbers are randomly generated to create new randomly generated phone numbers. This ensured a random sample of at least 300 respondents within each LGA.

The CIV survey methodology also tried to compensate for an over representation of female and older respondents who are more likely to respond to telephone surveys

of this nature. Interviewers were instructed to ask to speak to the youngest male at home aged 18 years or over. If no males were available, the interviewers asked to speak to the youngest female at home aged 18 years or over. This resulted in a final sample of over 25,000 respondents that comprises 48.9% males and 51.1% females ranging in age from 18 to 99 years. Adequate sample representation for each Victorian LGA was ensured by weighting all survey data according to the Estimated Resident Population from the Australian Bureau of Statistics (June 2006) for six groups in each LGA: males and females 18–34 years; males and females 35–54 years; and males and females 55+ years. As only one respondent was selected from each household, each respondent was also given an initial weight to represent their chance of selection within the household. The first CIV survey was completed in 2007 and another survey is being planned for late 2010.

Indicators derived from the CIV Survey and administrative data sources are summarized in Appendices 1–5. All available indicator results have been made readily accessible and publicly available through an interactive online platform at the CIV website[1] and the majority of indicators are available at the LGA level. All data has been made freely available to all levels of government and the general public via the website to ensure efficient data dissemination which is an integral aspect of any successful community indicator project. If indicators are to be useful, they must be adopted and included in community monitoring, policy and planning to make a real difference.

Linking Community Indicators Victoria to Health Planning and Policy

Health planning in Australia has its origins in the 1970s and for the past 40 years has been influenced by key trends in public administration. This includes a concern with equity in the 1970s, a focus in efficiency in the 1980s and 1990s, and more recently, a focus on improving public health outcomes (Bagley et al., 2007). The more recent focus on public health outcomes has also led to the adoption of outcomes reporting in state and federal governments across the country.

Unlike other Australian states, Victorian local governments are mandated by state legislation to undertake municipal public health planning to protect, improve and promote public health and wellbeing of local communities. All 79 local governments throughout Victoria are required to develop and submit a 4-year Public Health and Wellbeing Plan in accordance with the *Public Health and Wellbeing Act 2008* (Vic). Principles underpinning the act include evidence-based decision making; the importance of prevention as preferable to remedial measures; and community engagement and participation. The act also specifies that the evidence used in public health planning should be made available to the public to encourage

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[1] www.communityindicators.net.au

participation in the planning process and to facilitate an understanding of local public health issues.

The *Public Health and Wellbeing Act* requires municipalities to produce Public Health and Wellbeing Plans that are based on health status and health determinant data for the local population. Before the introduction of CIV, compiling this information was often a difficult and time-consuming task for local government planners due to problems with both availability and accessibility of data for local areas. However, from 2007 the CIV website collated much of this data for each LGA and made these freely available for use. Thus, CIV has become a useful evidence source for local governments preparing Municipal Public Health and Wellbeing Plans. The CIV online platform provides a gateway for local governments to access important social, environmental and economic health determinant data and to incorporate this as indicators in their planning and decision-making processes. The combination of a legislative requirement (the *Public Health and Wellbeing Act)* and a freely available, accessible tool (CIV), encourages community participation and consultation and is consistent with Holden's (2009) description of participatory deliberate democracy. If local governments are to incorporate CIV data into their planning, they also need to consider the CIV framework as well as the indicators included within each domain. The City of Ballarat is one municipality that considered the relevance of CIV in their public health planning and this chapter provides a detailed case study description of how CIV was used to develop their Municipal Public Health and Wellbeing Plan.

A Case Study of Indicators at Work: The City of Ballarat and CIV Collaboration

The town of Ballarat is located in regional Victoria, 110 km north-west of Melbourne and is Victoria's largest inland city. The municipality of the City of Ballarat has an estimated resident population of over 90,000 and a land area of 739 km^2 (Statistics, 2008). The town was originally established in the early 1850s by white settlers after the discovery of gold in the area. Today Ballarat is a regional urban centre servicing the central highlands area with some of Victoria's most important freight, tourist and commuter transport routes.

The collaboration between CIV and the City of Ballarat began in 2006 during the development of the new CIV Survey. All 79 local governments in Victoria were consulted in the survey's development and were also offered the opportunity to purchase additional survey time and items relevant to their municipalities. The City of Ballarat took this opportunity and sought additional sampling and locally specific survey items to assist in the development of the City's Municipal Public Health and Wellbeing Plan. The municipal's Community Planner was receptive to the idea and became engaged with CIV and the collaboration resulted in a community indicator-based Municipal Public Health and Wellbeing Plan. The steps taken to achieve this outcome are described in detail below. It is important to note that the step-by-step

summary gives the appearance of a consecutive or linear process, while in reality, the planning process is often dynamic and evolving with a number of stages occurring simultaneously.

1. Develop a Framework of Wellbeing

The use of community indicators should always be guided by a conceptual framework (Dluhy & Swartz, 2006). In 2006, the City of Ballarat began the municipal public health planning process by first considering, and then adopting, the CIV conceptual framework of wellbeing. This decision was based on the congruence between the CIV framework and the social and environmental determinants of health described by the World Health Organization (Wilkinson & Marmot, 2003; World Health Organization, 1946). The City of Ballarat's Health and Wellbeing Plan is based on the evidence and understanding of social and environmental determinants of health including socioeconomic status, early life experiences, stress, social exclusion and inclusion, work, unemployment, social support, addiction, food and transport.

The WHO set up the independent Commission on Social Determinants of Health to promote policies that reduce health inequalities and argued that public policy should be based on the evidence associated with these key determinants of health (Marmot, 2005). The wide-ranging influence of the key determinants of health also means that health status and health inequalities should be the focus of all policy makers and not only those solely concerned with population health. Thus, health is affected by a large number of issues in the community and local government planning must account for this. The social and environmental determinants of health also need to be considered within critical life transitions and this further widens the policy implications. These include the following key stages: early childhood; the transition from primary to secondary school; beginning employment; leaving home and starting a family; changing jobs or being made redundant; and retirement. Each of these transition periods can affect health by pushing people onto a more or less advantaged path. This review of international evidence concludes that the social gradient (or disadvantage) is one of the greatest risk factors to population health and outlines key policies and strategies for governments to address this determinant (Wilkinson & Marmot, 2003). Health and wellbeing planning for the City of Ballarat has been underpinned by the importance of these social and environmental determinants of health with special consideration placed on these key life-transition periods. These important influences on community health and wellbeing are also included in the CIV framework of wellbeing and are therefore immediately relevant to the diverse work of local government. Furthermore, the framework demonstrates the inter-relationships between multiple aspects of health and wellbeing. This was an additional practical advantage of adopting the CIV framework of wellbeing. The deconstruction of multiple aspects of community wellbeing into clear domains was useful for identifying multidimensional issues in health planning. For example, by using this framework it became apparent that initiatives that promoted walking and

cycling as active modes of transport also produced a number of additional bene-
fits. Other consequences included improved physical activity, increased community
surveillance and safety, reduced car dependence and congestion, safer roads and
reduced environmental pollution.

2. Incorporate Community Indicator Data

CIV data are freely available via the website and provide indicator-based data for
all 79 LGAs across the state of Victoria including the City of Ballarat. This includes
a broad range of indicators at the LGA level that are important to all municipal-
ities in the state. However, there are often issues that are unique to LGAs, and
sub-LGA level such as neighbourhoods and towns within the LGA. This is why the
CIV survey offered all local governments the chance to buy additional questions and
samples relevant to their LGA in the CIV Survey. The City of Ballarat elected to pur-
chase 1,200 additional respondents as well as the 300 standard respondents included
in the CIV survey, resulting in a total sample of 1,500 respondents across the LGA.
These respondents were asked 11 additional survey questions that enabled an assess-
ment of key population health issues for the area. The additional items are presented
in Table 14.1 and assessed physical exercise, fruit and vegetable consumption, alco-
hol consumption and smoking status. These topics are included as indicators in CIV
but data have historically only been published at the regional level by the administra-
tive data source of the Victorian Population Health Survey (Victorian Government
Department of Human Services, 2007). These survey items were analysed by CIV
to create additional local level, population health, community indicators for the City
of Ballarat to inform their health and wellbeing planning. When combined with the
existing CIV community indicators,[2] the City of Ballarat had access to substan-
tial local health and wellbeing data for the municipality. Furthermore the indicators
met all of the following criteria: they were easy to understand; user friendly; easily
accessed by both community and key stakeholders; and valid and reliable from a
neutral source.

3. Seek Community and Stakeholder Engagement

The City of Ballarat completed two stages of stakeholder engagement in the prepa-
ration of the Health and Wellbeing Plan. The first stage involved discussions with
the local Primary Care Partnership (PCP) which is a local network of key health and
welfare service providers. These discussions secured the participation of the PCP
in the planning process and clarified what data were needed to support the devel-
opment of the Health and Wellbeing Plan. As a result, the PCP contributed funds

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[2]CIV indicators included by the City of Ballarat are denoted in Appendices 1–5.

Table 14.1 Additional survey items requested by the city of Ballarat

City of Ballarat – additional survey items

1. Apart from gardening and household chores, in the last week how many times, if any, did you do vigorous leisure activity which caused you to huff and puff? For example, jogging, swimming (freestyle), singles tennis, aerobics, competitive sport, cycling.
2. How much time, in total, in the last week would you have spent doing vigorous leisure activity?
3. In the last week how many times, if any, did you walk briskly for recreation or exercise or to get from place to place?
4. How much time, in total, in the last week would you have spent walking briskly?
5. Apart from walking, gardening and household chores, in the last week how many times, if any, did you do moderate leisure activity that caused a slight but noticeable increase in breathing and heart rate? For example, low-pace swimming, light-to-moderate intensity exercise classes or social tennis or dancing?
6. How much time in total in the last week would you have spent doing moderate leisure activity?
7. Now some questions about diet. How many serves of vegetables do you usually eat each day? A 'serve' is $\frac{1}{2}$ cup of cooked vegetables or 1 cup of salad vegetables.
8. How many serves of fruit do you usually eat each day? A 'serve' is 1 medium piece or 2 small pieces of fruit or 1 cup of diced pieces.
9. In the last 12 months, how often did you have an alcoholic drink of any kind?
10. On a day that you have an alcoholic drink, how many standard drinks do you usually have? A standard drink is equal to 1 pot of full strength beer, 1 small glass of wine or 1 pub-sized nip of spirits. (1 can of full strength beer is equal to 1.5 standard drinks).
11. The following question is about tobacco smoking. This includes cigarettes, cigars and pipes. Which of the following best describes your smoking status?

that were used to purchase the additional survey items and increased sample size included in the CIV Survey.

The second stage of stakeholder engagement occurred after CIV data were compiled into a series of fact sheets for each of the five domains of the framework. These fact sheets were used to initiate conversations with key external stakeholders, community groups and internal municipality staff/committees. This community engagement process together with other relevant and documented community consultations identified key issues of importance to the community. Community indicators were used as a 'conversation catalyst' in the community engagement process and strengthened the stakeholder engagement because the conversations were based on factual information and not anecdotal information only. It is common for staff from key stakeholder organizations to have their own predisposed ideas about what is needed in the community and often this is based on anecdotal evidence, not fact. In contrast, community indicators are not able to answer all questions about a community while community and stakeholder engagement provides the contextual background that the statistics require. This is the dual role of community indicators.

The City of Ballarat used the International Association for Public Participation framework and principles for community engagement and public participation (Carson, 2009). This framework articulates five levels of public participation: inform; consult; involve; collaborate; and empower. A number of strategies were

used to inform the community and stakeholders about the development of the Health and Wellbeing Plan including notices in the local newspaper, fact sheets on the municipality's website, resident newsletters and stakeholder newsletters/email groups. The strategies employed for consultation included key stakeholder interviews, workshops, document analysis and public display of the draft plan. At the level of involvement and collaboration, draft actions were amended and new actions included as a result of key stakeholder meetings and public submissions. All participants who made public submissions or were engaged as stakeholders were informed of how their input had resulted in changes to the final action plan.

4. Identify Priorities, Define Issues and Consider Solutions: Construction of the Municipal Public Health and Wellbeing Plan

After the completion of community and stakeholder engagement, all sources of information were combined with the City of Ballarat's key strategic planning documentation, including the corporate plan. This process identified 18 priority issues that needed to be targeted to improve, protect and promote the health and wellbeing of the Ballarat population. The priority areas identified for action satisfied at least one of the following criteria: the community engagement process identified the issue as being important to the local community; it was identified as a key issue based on analysis of the demographic profile and local health and wellbeing data for the City of Ballarat; it could be identified as a social or environmental determinant of health with an existing evidence base of interventions that could be used to protect or promote health and wellbeing. In addition, the priorities needed to link to the Victorian state government's six health priorities which aim to improve the overall health of the Victorian population and reduce health inequalities within communities.

The 18 priorities identified included personal health and wellbeing, community connectedness and strength, early childhood, personal and community safety, lifelong learning, service availability, urban planning and development, transport accessibility, environmental sustainability and health, economic activity and employment, skills, income and wealth, work-life balance, cultural diversity, indigenous community and reconciliation, participation in arts and cultural activities, participation in recreational and leisure activities and citizen engagement. After the priority areas were identified, staff across each business unit at the City of Ballarat participated in a series of action planning meetings and interviews to identify relevant strategies, solutions and actions. This lead to the development of 48 actions in response to the priority areas and formed the basis of the 4-year Municipal Public Health and Wellbeing Plan.

5. Link Health and Wellbeing Planning Framework to the Whole of Organization

By adopting a social and environmental determinants view of health together with the CIV framework, the City of Ballarat had a solid rationale for a whole of

organization approach for the development of solutions and actions. Acting at a local level, local government directly influences factors such as urban planning, management of natural resources, employment, transport, community participation and access to services. Thus, the CIV framework not only showed how health planning affects multiple areas of council service provision but also facilitated a more integrated, whole of organization approach to creating the environments for healthy communities.

When the City of Ballarat developed their Municipal Public Health and Wellbeing Plan it became apparent that a number of other specific plans needed to be developed and/or reviewed to facilitate a more integrated approach to planning and service delivery across multiple council departments. This included the Community Safety Action Plan, Youth Strategy, Positive Ageing Strategy, Cultural Diversity Strategy and Municipal Early Years Plan. The Health and Wellbeing Plan served as catalyst for this additional and more integrated planning. Furthermore, the Health and Wellbeing Plan served as an integrating plan between the high-order corporate plan and land use plan (the Municipal Strategic Statement).

The final Municipal Public Health and Wellbeing Plan serves as a reference document for all relevant departments within the City of Ballarat, external key stakeholders and community groups. Even more importantly, it provides a monitoring and review tool when combined with updated time series community indicator data. The direct link between community indicators and government policy is used to promote and enhance the health and wellbeing of all members of the community and is a practical application of community indicators at work.

6. Monitoring and Evaluation

Gauging the success of the implementation of the Municipal Public Health and Wellbeing Plan can only be achieved by regular monitoring and evaluation. The plan was adopted by the City of Ballarat for a 4-year period and the organization is working to embed the plan across the whole organization through the annual business unit planning and monitoring process. At the business-unit level, actions are implemented, monitored and evaluated through both process and impact evaluation measures. Tracking and monitoring progress of Ballarat's long-term health and wellbeing outcomes will be through the use of indicators provided by CIV. In addition, the organization's commitment to professional development and training will support continuous improvement in program monitoring and evaluation.

There is no gold standard for health planning review and monitoring within local government in Australia. Furthermore, there is little research published on the use of community indicators in this role and the current case study has highlighted the need for future research in this area. This is a particularly challenging issue over time as indicator frameworks may also require review and updating as new issues within communities arise.

Conclusions and Lessons Learnt

This chapter provides a practical example of how community indicators can be used to develop evidence-based, local government, health and wellbeing planning. The Municipal Health and Wellbeing Plan developed for the City of Ballarat was based on the CIV theoretical framework and community indicators were used to facilitate engagement with the local community and key stakeholders. The use of community indicators in the development of the plan resulted in a public health plan that is contextualized within multiple aspects of quality of life (Fig. 14.2). It resulted in local government planning policy that incorporates forward and backward-looking values (Holden, 2006) and social, economic and environmental determinants of health.

Many lessons were learnt in the process of developing the Municipal Public Health and Wellbeing Plan and much is consistent with the recommendations provided by Dluhy & Swartz (2006). Most importantly, the community indicators included in CIV are grounded in a broad and comprehensive framework that captures as much of a community as possible. The breadth of community wellbeing is all encompassing, and as such, the inclusion of a wide range of community indicators for public health planning leads to the development of numerous additional planning strategies on community safety, youth, positive ageing, cultural diversity and early childhood. The CIV framework is comprehensive and congruent with social, environmental and economic determinants of health. It enabled evidence-based, integrated health planning, not just the provision of health care services or health education programs which historically have been the narrower, traditional focus in local government. The CIV framework not only demonstrates how health planning affects multiple areas of council service provision but also has facilitated
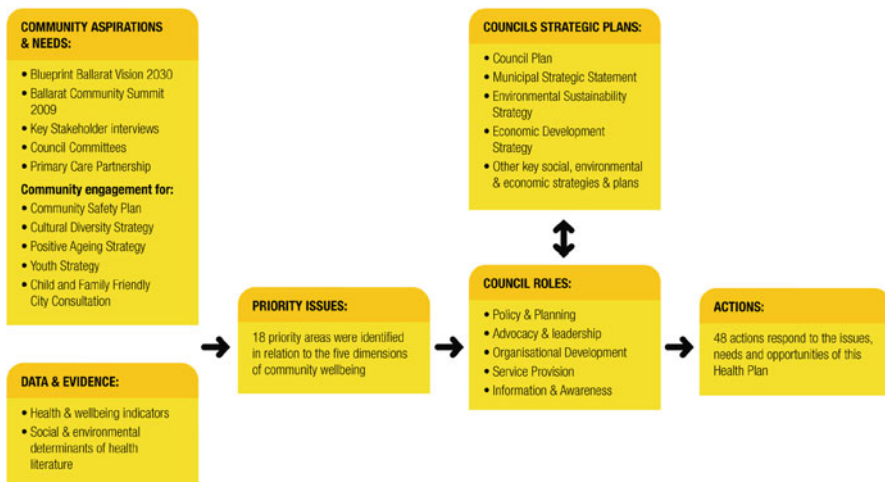
Fig. 14.2 The methodology used to develop the city of Ballarat's health & wellbeing plan (City of Ballarat, 2009)

a more integrated, whole of organization approach to creating the environments for healthy communities.

One of the most important lessons learnt from the current case study was that community indicators need a champion in government if they are to have planning or policy outcomes. This is essential. The CIV and City of Ballarat collaboration would not have been successful if the municipality Community Planner was not aware of community indicators, did not believe in their value, or was afraid of a statistically based tool. A number of professionals fear numbers, worry about how to interpret statistics and are mistrustful of indicators if they are not aware of their strengths in measuring, understanding and improving a system (Pencheon, 2008). Both CIV and the City of Ballarat Community Planner shared the goal of evidence-based planning and the collaboration was facilitated by this mutual priority.

The current case study also emphasizes the wider role of community indicators beyond the commonly held notion of indicators being an outcome-based tool for policy and planning. One of the resounding themes of the current collaboration was how useful community indicators are for engaging the community and key stakeholders and starting conversations between councils and the broader community. This is described by Holden (2009) as the deliberative democracy aspect of community indicators because they are the conversation catalyst between a local government and the local community. Local governance requires citizen and stakeholder engagement to decide on the issues of most importance to a community and to develop potential solutions. Current practice in Victoria is to engage with key stakeholders and the most influential community groups. However, community indicators themselves can provide a mechanism for the 'quieter voices' within a community to be heard. For example, it is often difficult to engage community members from areas of disadvantage in community consultation but community indicators can highlight the need for further investigation (e.g. indicators of financial stress, food security). It is the combination of the community indicator data and community engagement that results in the most useful information for planners and policy makers. Community engagement that is focused around community indicators demonstrates the dual role of indicators being able to start conversations within a local context that are not always able to be quantified. Engaging people on real issues contributes to healthier, stronger communities, because the community itself owns the future plan and feels part of the decision-making process.

The collaboration formed between the City of Ballarat and CIV was based on an unresourced need that most local governments face: finding relevant and reliable local data. Australian local governments are often in dire need of reliable local data as well as the staff who are able to analyse these data. CIV provides both services free of charge to all local governments in the State of Victoria. The current case study demonstrates the multiple uses that community indicators have in local government health planning and also provides an easily understood and practical example of how planners can incorporate community indicators in their current roles. Most importantly, this case study clearly demonstrates the need for community-based health and wellbeing data, and the importance of community indicators as a whole.

Appendix 1: *Community Indicators Victoria* Indicators included in the Domain of Healthy, Safe and Inclusive Communities

Policy area	Indicators	Measures
Personal health and wellbeing	Self-reported health[a,b]	People self-reporting health as excellent or very good: expressed as a percentage of adult population
	Subjective Wellbeing[a]	Personal Wellbeing Index: Australian Unity Wellbeing Index
	Life expectancy[b]	Life expectancy at birth
	Adequate physical exercise[b]	People engaged in adequate physical activity: Time and sessions (regional)
	Fruit Consumption[b]	People meeting recommended intake levels (regional)
	Vegetable Consumption[b]	Consumption of recommended intake of fruit (regional)
	Obesity[b]	Overweight or obese people according to Body Mass Index (self-assessed weight and height) (regional)
	Smoking status[b]	People who are current smokers (regional)
	Risky Alcohol Consumption[b]	People drinking at levels for long-term risk of harm (regional)
	Illicit Drug Use	Percentage of population that use illicit drugs (regional)
	Psychological Distress	People at risk of psychological distress according to Kessler 10 (regional)
Community connectedness	Feeling part of community[a,b]	Satisfaction with feeling part of the community: Australian Unity Wellbeing Index
	Social support[b]	People who can get help from friends, family or neighbours when needed
	Volunteering[b]	People who help out as volunteers
	Parental participation in schools[b]	Parents involved in activities at their children's school
Early childhood	Early Childhood Development	Children who reach Australian Early Development Index targets
	Child Health Assessments[b]	Key ages and stages Maternal and Child Health Visits at Age 3.5 Years
	Immunization[b]	Percentage of children fully immunized at age 12–15 months
	Breastfeeding[b]	Children fully breastfed at 6 months of age

Appendix 1: (continued)

Policy area	Indicators	Measures
Personal and community safety	Perceptions of safety[a,b]	People who feel safe or very safe when at home alone during the day
		People who feel safe or very safe when at home alone after dark
		People who feel safe or very safe when walking alone in their local area during the day
		People who feel safe or very safe when walking alone in their local area after dark
	Crime[b]	Recorded offences for crimes against the person
		Recorded offences for crimes against property
	Family violence[b]	Recorded incidences of family violence
	Road safety[b]	Road traffic fatalities
		Road traffic major injuries
	Workplace safety	*Measure under development*
Lifelong learning	Home Internet Access[a,b]	People with Internet access at home
		People with broadband Internet access at home
	Library usage	People with a library membership
	Apprenticeships and vocational training enrolments[b]	People aged 25–64 years enrolled in vocational education and training
	Destinations of school leavers[b]	People fully engaged in work or study
		People not engaged at all in work or study
		People employed full time
		People studying full-time at a non-school institution
		People not attending school and studying full time aged 15–19 years
	School retention rates[b]	People aged 17 years still attending secondary school
		People aged 17 years not attending any educational institution
Service availability	Access to services	*Measure under development*

[a]Indicator derived from the CIV Survey.
[b]Indicators included by the City of Ballarat in their Municipal Health and Wellbeing Plan.

Appendix 2: *Community Indicators Victoria* **Indicators included in the Domain of Dynamic, Resilient Local Economies**

Policy Area	Indicators	Measures
Economic activity	Retained retail spending	*Measure under development*
	Highly skilled workforce[b]	People employed in high skilled occupations (ANZSCO levels 1–3)
	Business growth	*Measure under development*
Employment	Employment rate[b]	People who are employed and aged 15 years and over
	Unemployment rate[b]	People who are unemployed
	Local employment[b]	People living and working in the same Local Government Area
Income and wealth	Income[b]	Median Equivalised Gross Weekly Household Income
	Distribution of income	Ratio of 80th percentile to 20th percentile gross weekly household income
	Per capita wealth	*Measure under development*
	Financial stress[b]	People who could raise 2,000 dollars in 2 days in an emergency
	Distribution of wealth	*Measure under development*
	Food security[a, b]	People who ran out of food in the last 12 months and could not afford to buy more
Skills	Educational qualifications[b]	People aged 25 years and over who have a non-school qualification
		People aged 25 years and over who have a bachelor degree or higher qualification
		People aged 25 years and over with highest qualification level between certificate III and diploma
Work-life balance	Adequate work-life balance[a, b]	Employed people who disagree that their work and family life often interfere with each other

[a]Indicator derived from the CIV Survey.
[b]Indicators included by the City of Ballarat in their Municipal Health and Wellbeing Plan.

Appendix 3: *Community Indicators Victoria* Indicators Included in the Domain of Sustainable Built and Natural Environments

Policy Area	Indicators	Measures
Open Space	Access to areas of open space	*Measure under development*
	Appearance of public space[b]	*Measure under development*
Housing affordability	Housing affordability[b]	Houses with housing costs 30% or more of gross income
		Median house price
		Median unit/flat/apartment price
		Occupied private dwellings that are government-owned rental dwellings
Transport accessibility	Transport limitations[a, b]	People who experienced transport limitations in the last 12 months
	Public transport patronage	*Measure under development*
	Dedicated walking and cycling trails	*Measure under development*
	Practical non-car opportunities	*Measure under development*
	Roads and footpaths	Satisfaction with local roads and footpaths
Sustainable energy use	Greenhouse gas emissions	*Measure under development*
	Household energy use	*Measure under development*
	Renewable energy use	*Measure under development*
Air quality	Air quality	Days exceeding NEPM guideline
Water	Condition of natural streams and waterways	Index of stream condition
	Water consumption	Measure under development
	Waste water recycling[a, b]	Percentage of households who collect waste water
Biodiversity	Native vegetation cover	*Measure under development*
	Carbon sequestration	*Measure under development*
	Weeds and pests	*Measure under development*
Waste management	Household waste generation[b]	Non-recyclable garbage generated by households
	Household waste recycling[b]	Recyclables and green organics recycled households
		Non-organic recyclable waste generated by households

[a]Indicator derived from the CIV Survey
[b]Indicators included by the City of Ballarat in their Municipal Health and Wellbeing Plan.

Appendix 4: *Community Indicators Victoria* Indicators Included in the Domain of Culturally Rich and Vibrant Communities

Policy Area	Indicators	Measures
Arts and cultural activities	Opportunities to participate in arts and cultural activities[a, b]	Opportunities to participate in arts and cultural activities
	Participation in arts and cultural activities[a, b]	People who participated in arts and related activities in the last month
Sporting and recreational activities	Opportunities to participate in local sporting and recreational activities	*Measure under development*
	Participation in sporting and recreational activities	*Measure under development*
Cultural diversity	Community is an accepting place for people from diverse cultures and backgrounds[a, b]	Percentage of people who agree that it is a good thing for a society to be made up of people from different cultures

[a]Indicator derived from the CIV Survey.
[b]Indicators included by the City of Ballarat in their Municipal Health and Wellbeing Plan.

Appendix 5: *Community Indicators Victoria* Indicators Included in the Domain of Democratic and Engaged Communities

Policy Area	Indicators	Measures
Citizen engagement	Opportunity to have a say on important issues[a, b]	People who feel they have a say on important issues
	Participation in citizen engagement[a, b]	People who participated in citizen engagement activities in the last 12 months
	Women local councillors[b]	Percentage of female local councillors
	Opportunity to vote for a trustworthy political candidate[a]	People who agree that they are able to vote for a trustworthy political candidate
	Membership of local community organizations and decision-making bodies[b]	People who are members of a decision-making board or committee

[a]Indicator derived from the CIV Survey.
[b]Indicators included by the City of Ballarat in their Municipal Health and Wellbeing Plan.

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