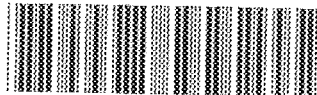


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Improving community health through evaluations

Joanna Becker

Abstract There has been an increasing emphasis on sustainable community development in recent years, which is linked to community health through quality of life and intergenerational considerations. Evaluations are one of the basic tools to improving community health with the most effective evaluations being those that are meaningful to the community itself, and which provide tangible feedback and incentives for improved performance. Drawing on well-known methods, this paper illustrates four important components of community evaluations. Although each method incorporates some or all of these components, their achievements to date have been limited. The reasons for this, as well as how evaluations can play a more effective role in improving community health, are discussed.

Introduction

Communities have historically had a close relationship to their natural resource base and have tended to remain within the carrying capacity of a region if they were to survive. However, this is no longer the case, especially for North American communities, which need to address sustainable development to continue in the future. This paper looks at to what extent evaluations help to do this.

Evaluating community life will not by itself improve its health but provides a reference to start from. As Besleme *et al.* (1999) concluded from a study of community indicators in two communities, the process itself produces outcomes, but moving from evaluation to action requires both citizen participation and policy implementation.

This paper considers to what extent four evaluation methods have improved community health in North America. These methods illustrate how public participation, clarity of presentation, repeated application and establishment of target behaviors emphasized in the Bellagio Principles (Becker, 2004) are important for community evaluation methods. The

paper summarizes the strengths and weaknesses of these methods and their accomplishments to date based on the literature and personal interviews. It concludes with suggestions as to how to better use evaluations to improve community health.

What is community health?

A community is an organized body of people who share a common interest, generally living in the same area. Jacobs (1995) identifies place as the important link between people in a community, whereas Warburton (1998) believes that the relationships between people are important as well as a sense of place. A shared sense of history is also important. A community may be little more than an extended family or a megapolis of several million people. Increasingly, there is also awareness of the global community consisting of all the Earth's inhabitants. Smaller communities such as business, religious and political groups may nest within larger ones. Membership in one community does not preclude membership in another.

It is not easy to define community health, often equated with 'quality of life', referred to in the 'Caring for the Earth' definition of sustainable development (IUCN, 1991). Quality of life has often been treated synonymously with the term 'well-being' (Rogerson *et al.*, 1987). Many characteristics have been identified with quality of life (Mitchell *et al.*, 1995) and include personal and community development and security as well as the physical environment and the provision of goods and services. If the intergenerational considerations of sustainable development (WCED, 1987) are included in community health, then the sustainability of many urban communities is questionable and may actually be deteriorating.

Ideally, community development is closely linked to sustainable development with provision of goods and services for both current and future demands. Sustainable development may be less relevant in poor communities where problems are immediate and environmental impacts are local and comparatively minor (McGranahan *et al.*, 1996). But at the most fundamental level, sustainable development means continued existence (Bossel, 1998). Many communities have persisted in the same location for years, whereas others have suddenly perished or been reformulated. Most survive now at the expense of resources from other places (see Ecological Footprint).

Agenda 21 identified the major physical environmental issues facing global urban settlements: as improved planning and management; integrated provision of environmental infrastructure, the promotion of sustainable intra-urban energy and transport systems, anticipatory planning in disaster-prone areas and urban health (UNCED, 1992).

How then can modern communities become more sustainable? Selman proposes that a top priority for sustainable urban development is the creation of viable political and institutional systems capable of 'framing broadly based strategies, programmes and policies' (1996, p. 41). Many of the characteristics of making a community sustainable are what make it a desirable place in which to live.

Components of a community evaluation program

An evaluation program uses some type of indicators, whether these are qualitative or quantitative, summarized in an index or assigned an arbitrary value. Much has been written elsewhere about the desirable qualities of indicators (Mitchell, 1996; Cairns *et al.*, 1993; Van der Bergh, 1996; among others) and those that are selected for the assessment of community health will depend on the interests of the specific group but should include social indicators. The social indicators movements arose in the USA about 1910 (Smith, 1991). Environmental indicators, including the pressure-state-response (PSR) framework described subsequently, were also inspired from the social indicator movement in the 1980s.

What are the important indicators of a community evaluation program? Cobb and Rixford (1998), in their history of social indicators, conclude that measurement itself does not induce appropriate action nor mean that it is a good indicator. They recommend seeking indicators that reveal causes not symptoms when planning to act and that a democratic indicators program requires more than good public participation.

Given the appropriateness of the selected indicators, can the implementation of an evaluation method itself help improve community health? No matter how well an evaluation method is devised and implemented, it will not help improve community health unless there is the political will and individual commitment to make it happen. However, the Bellagio Principles are important in all evaluation methods as illustrated in the following examples.

Public participation

Community health must be determined by the citizens of that community. Participatory development is defined by the World Bank as 'a process through which stakeholders influence and share control over development initiatives and the decisions and resources which affect them' (World Bank, 1996, p. xi). Lack of participation and control of resources are recognized as contributing to threats and failures of projects (Machlis and Tichnell, 1985; Nepal and Weber, 1995). Cobb and Rixford (1998) conclude that moving

from indicators to outcomes is more likely with 'control over resources'. Community participation helps identify local issues as well as implementing necessary changes.

McAllister (1999) lists potential benefits of participatory monitoring and evaluation: as direct learning from the lessons for the community; information, ownership of the process by the community and community capacity building. A study by the World Bank's Learning Group on Participation found that, although more time was required for the preparatory stages, the costs may be no higher for preparing and implementing participatory projects than non-participatory ones (Bhatnagar, 1992). The study concludes that consideration should be taken of the costs of not providing for participation.

The concept of stakeholders has now expanded to include not only the rural poor, as in the FAO's People Participation Programme of the 1980's, but also local institutions and civil society in a power-sharing scheme based on negotiation and conflict management (Warren, 1998). Participation itself will not guarantee success, however, and Gilbert (1987) believes that the achievements of community participation have been greatly exaggerated, noting that the interests of weaker groups may be damaged and that such participation depends primarily on political interests. Participation itself needs to be evaluated to determine the extent and quality of participation, the costs and benefits of participation and the impact of participation on outcomes, performance and sustainability (Karl, 2000). One evaluation program notable for its public participation is the Sustainable Seattle Program.

Sustainable Seattle Program

This Program was initiated by public participation with a multi-stakeholder process of 150 citizens in 1992 (Sustainable Seattle, 1998). This process continues with a steering committee of twenty or more citizens and a bi-annual indicator review. It therefore also addresses re-application, although funding is not guaranteed for its continuance and it is not mandated by the legislature. It has improved its clarity of presentation by reducing the indicators from ninety to forty and presenting these as sustainability trends that are declining, improving or new with a further category for those with insufficient data (Figure 1). The indicators serve as educational tools, as well as being helpful to decision-makers. Atkisson (1999) attributes its success to its administrative base, good timing and skilled facilitation. He notes, however, that the long-term focus caused some alienation and the difficulty of handling technical topics by volunteers. Other limitations noted by Hardi *et al.* (1997) are that some indicators cannot be presented in time

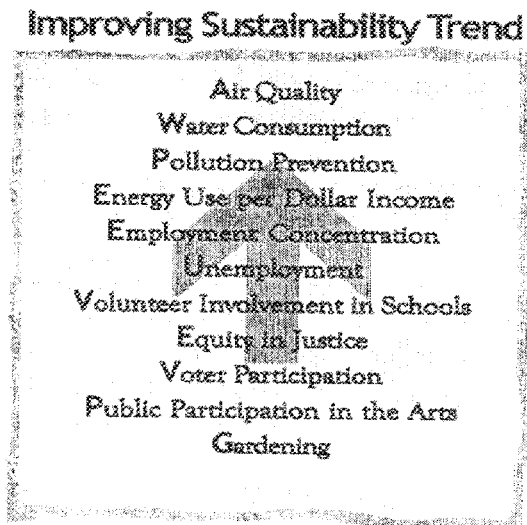


Figure 1 Sustainable Seattle indicator trends (Sustainable Seattle, 1998)

series, with changes to the indicator set making comparisons over time difficult.

Current work on the Program is addressing some of these issues, such as considering the use of targets and applying a filter to the indicators to determine their appropriateness, data availability and the ability to translate the findings into action. The current Executive Director, Chantal Stevens, is well aware of the need to incorporate the program with action. Strategies for actions are to be developed by the Steering Committee for the 2005 Indicators Update, with the data collected by Sustainable Seattle and community volunteers. Stevens admits that in the past Seattle has had little capacity to implement the findings of the Program, partly due to lack of paid staff, and she thinks it could be instructional to compare the performance of Seattle with other cities (personal communication, 2004).

As to its effectiveness, a study by Oiden (2003) found that, although the Sustainable Seattle Program did not directly affect policies, it did have a significant impact on decision-makers. Seattle has recently been praised for its indicators and comprehensive plan (Kent, 2003). However, the lack of incorporation into public policy and its dependence on volunteer staff has limited the effectiveness of the program to direct changes in Seattle and King County. As of now, therefore, its ongoing public participation is not carried into action, particularly by the business community, so as to maintain and improve the quality of life that attracts its workers to the community.

Clarity of presentation

Meadowcraft states that 'decisions about sustainable development cannot be reduced to technical choices . . . but require value choices about the priorities of individuals and communities' (2004, p. 165). The information must be understandable so that the stakeholders can decide what the information means to them (Lawrence, 1998). Difficulties in presenting results clearly include those of comparing disparate measurements, losing disparate values through aggregation and making the results comprehensible. There are several approaches to clarity of presentation from the Barometer of Sustainability for assessing British Columbia's progress towards sustainability to the grades of the Oregon Benchmarks Program. However, one of the simplest and conceptually clear is that of the ecological footprint.

The Ecological Footprint

This method was first proposed by William Rees and was developed further by him and Mathis Wackernägel for the Lower Fraser Valley in British Columbia (Wackernägel and Rees, 1994). It is an ecological accounting method using land area as the main biophysical measuring unit. The popularity of this method is predominately its simplicity and its applicability from the personal to the national level. Its relevance is demonstrating the extent to which local carrying capacity has been exceeded using per capita material consumption. The method assesses a regional 'footprint' for a subject. This footprint is quantified as the area required to produce goods and to assimilate harmlessly the wastes from that entity so as to identify its carrying capacity.

The model calculates a 'fair earth share' (total productive land area divided by the world population) of 1.5 ha per capita at present population levels. For comparison, the average footprint of a resident of India is 0.8 ha, whereas that of the average North American is 10.3 ha (Rees, 1992). The formula for calculating an ecological footprint is based on the land area required to produce what is consumed and the amount of forest required to compensate for the carbon dioxide generated from this consumption. These two are added together to produce a total land area that shows the bio-capacity (land use capacity excluding housing).

Although an aggregate index is produced, it is conceptually clear by using acreage as the numeraire. This is visually comprehensible and applicable at any scale. Disadvantages of the method noted by Hardi *et al.* (1997) are that it does not indicate future footprints nor does it include important issues such as areas lost for biological productivity nor consider economic effects other than resource use on the environment. They also consider that its results can be overly optimistic.

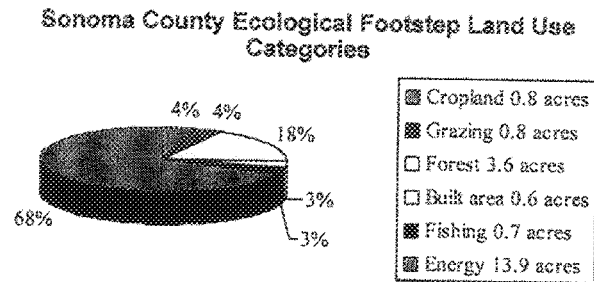


Figure 2 Percentages of land use categories in the Sonoma Footprint (Sustainable Sonoma County and Redefining Progress, 2002)

Sonoma County in California was among the first counties in the USA to undertake an Ecological Footprint evaluation in 2002. In addition, the County set two national precedents – all of the County’s municipalities have pledged to reduce their greenhouse gas emissions, and all of them have completed their greenhouse gas inventories to establish their baselines.

The Ecological Footprint was developed for national data that are not necessarily applicable at a regional level. To measure the County’s footprint, researchers adjusted the national footprint using relevant and available local indicators such as population, vehicle miles traveled, average house size, electricity usage, sales of general merchandise and income. The percentages of its footprint are shown in Figure 2.

Although this method does not use public participation to select the indicators, there were two Focus Groups, consisting of local scientific and community leaders, who reviewed the study and determined that the ecological footprint concept was in general a good one (Sustainable Sonoma County and Redefining Progress, 2002). Specific comments on its weaknesses included difficulty in knowing how the numbers were derived, too many assumptions, insensitive to small changes and anthropocentric. They commented that the results are not usable for analysis or public policy, although the City of Petaluma in Sonoma County has used the Ecological Footprint to help select its wastewater treatment method.

Regular application

The effectiveness of a method in improving community health depends, in part, on its regular application. Repeat evaluations show actual changes and where improvements can still be made. It may be necessary to refine the evaluation to changing circumstances or to better reflect priorities, but there should be guarantees for re-application.

The Oregon Progress Board's Benchmarks has had continued executive support for sixteen years and is politically independent. The program includes public participation and there is a bi-annual review of benchmarks to incorporate changing public values. It addresses future projections with its key benchmarks and by having goals with values, vision and objectives for each benchmark. There are quantitative targets for social and economic indicators as well as environmental ones. Jeff Tryens, Director of the Oregon Progress Board, notes that it is not strictly an evaluation 'tool' because little in the way of diagnostics has occurred using the benchmarks (personal communication, 2005). However, it demonstrates that such efforts can be incorporated into government operations while remaining non-partisan.

Oregon Benchmarks Program

The Benchmark Program was developed out of the Oregon Shines Strategic Vision of 1989. The Oregon Progress Board was created by the legislature the same year to act as steward of this vision. The legislature demonstrated its continued support of the Progress Board by removing a sunset provision in 1997 and linking the benchmarks to the budget through the Benchmark Blue Book. The Board was aligned closer to state operations by placing it in Department of Administrative Services in 2001. Funding has been available for the Board since its inception, but must be re-authorized for the program every two years.

The benchmarks expanded to 272 before being reduced to ninety, with seventeen of these being key benchmarks. There is a list of several developmental benchmarks that might be included in the future to accommodate increasing standards and values. There is some graphical representation with each key benchmark noted as worsening, improving or holding steady. This format is less graphical than the grades that were previously assigned using the base and target years compared to the current year, but is less value-laden. The results are presented for each year from 1990 with targets set for most of the benchmarks for 2005 and 2010 (see Fig. 3 for one of the indicators). Benchmark performance is also compared with national and Washington State data and between Oregon Counties.

To date, however, the accomplishments of the program have been limited. A report to the Organization for Economic Co-operation and Development (OECD) by Tryens (2004) lists its significant accomplishments as: encouraging collaboration and coordination within and between State agencies; agreement by the Federal government to provide regulatory relief and fiscal flexibility for improving benchmark trends and the use of benchmark-based performance measures as an internal management tool for all state agencies involved in health policies.

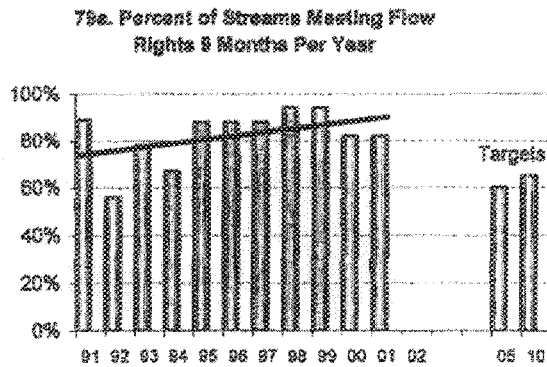


Figure 3 Minimum stream flow rights (Oregon Progress Board, 2003)

Criticisms of the program in the OECD Report (Tryens, 2004) were: the decreasing importance of differentiation between key indicators even though these are prioritized; the use of the data/analysis in a general context for decision-making rather than application to policy making or resource allocation; and the lack of meaningful impact on Oregon's residents (still only 20% are aware of the program). Lechter and Tryens (2003) suggest that fiscal and political considerations rather than benchmarks drive budget decisions. Hardi *et al.* (1997) criticize the selection of the benchmarks as relatively arbitrary with too many indicators for the decision-making process, as well as the classification of indicators being vague and category selection inconsistent.

As to the program's impact on regional policies, Rob Bennett, Senior Program Manager of Sustainable Development in Portland, considers that, although the Benchmarks were helpful to Portland through the Future Focus Program of the early 1990s, these have been replaced to a large extent by local assessment programs such as Present Portland Futures or the Sustainable Development Commission on Global Warming (personal communication, 2004).

Lechter and Tryens (2003) recommended improving the program by analyzing why the State or County has met its targets or not and re-examining the health benchmarks to enhance their internal and local relevance and their connections with other indicators. They also note the importance of reinforcing community ownership of the Oregon Shines Vision and the Benchmarks.

Although there is some uncertainty about continued legislative support and funding, perhaps most hopeful for its future impact is the recent requirement that criteria-based guidelines for performance measure development and reporting be incorporated into the budget development

process. This, Jeff Tryens believes, holds 'substantial promise for engaging civil society in improving government performance' (Tryens, 2004, p. 9). He concludes that the process has significantly contributed to a culture change in Oregon, with many leaders considering that the Oregon Benchmarks have made the state more result-oriented in the way it develops and implements policy.

Establishment of clear target behaviors

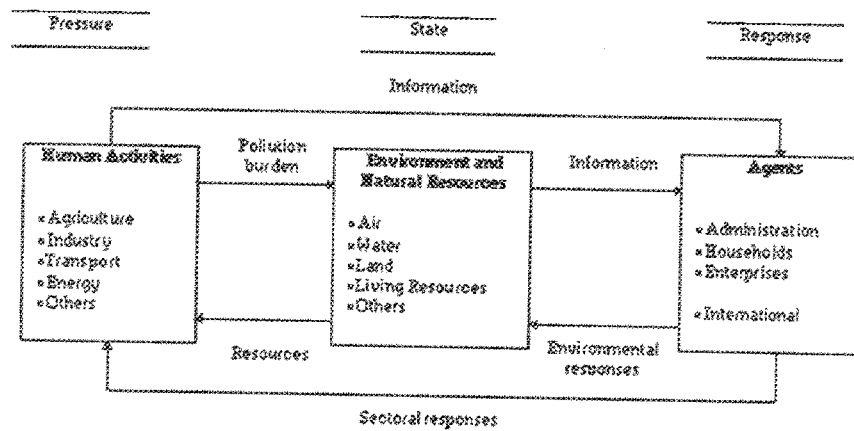
If evaluations are to indicate where progress is being made, then it is necessary to include target measures to indicate what to achieve or thresholds below which performance should not fall. Thresholds were implemented initially for environmental management with Safe Minimum Standards (Ciriarcy-Wantrup, 1952), but only alert attention to an undesirable situation rather than proposing a solution. Targets have the advantage that they advocate a solution even if this is not currently attainable.

One program that includes targets is the PSR framework. This framework was originally developed by the Government of Canada in the 1970's and later adopted in a modified form by the OECD and other international organizations. Although more applicable at the national or regional level, McCann (1995) notes its appropriateness for sub-national or regional use in specific case studies and where geo-referenced data exist. The example used here is the Canadian Department of Transportation's application of PSR to transportation issues.

Pressure-state-response

In this method, pressure refers to the driving force that creates the impact, state refers to the current condition and response represents the mitigation or target for that pressure (Figure 4). However, although PSR is well adapted to an issue-oriented approach, Hardi *et al.* (1997) criticized the model itself as lacking with over-simplification of inter-linkages and difficulty in determining whether an issue is a driving force or a state or both. Tschirley (1996) notes the inability of the method to address the multiple dimensions of sustainability and that it does not function well for planning or non-issue-oriented information. The government of New Zealand, which uses a PSR framework, notes that 'as a reporting framework it is prone to over-simplify the complex dynamics within any environment or ecosystem and misrepresent the causes of environmental change' (New Zealand Ministry of Environment, 1999, p. 9).

Despite these criticisms, the method is a simple and powerful method if the causal linkages are made clear. To assist with identifying linkages, the



Source: *Adrienne, 1999*

Figure 4 The PSR model: A conceptual framework for Environmental Performance indicators (Adrienne, 1993)

United Nations Commission on Sustainable Development (UNCSD, 1996) undertook an analysis of the indicator relevance and its relationship to other indicators. The OECD is also promoting harmonization of individual initiatives of OECD member countries in the field of environmental indicators by developing a common approach and conceptual framework (OECD, 2003).

Transport Canada's plan for Sustainable Transportation is based on Canada's Sustainable Development Strategy (SDS) that is updated every two years. Cristobal Miller, Senior Analyst of Sustainable Development for Transport Canada, states that 'The Pressure-State-Response approach was originally explored when we were developing the indicators, but because we wanted the indicators to be very close to the specific objectives of the SDS, the approach was not, strictly speaking, applied. However, the final set of indicators chosen to track our progress with SDS's strategic objectives includes some of the environmental pressures'. He notes that 'The PSR approach may be revisited as part of our efforts to development of performance indicators for the SDS' (personal communication, 2004).

Recent accomplishments of Transport Canada have been a policy framework for the transportation system to meet future economic, social and environmental needs (Transport Canada, 2003) and Transport Canada's third SDS (2004) which defines challenges and commitments for the next three years and attempts to address social and economic factors as well as environmental ones. The SDS includes an Environmental Management System Framework. The format is shown in Table 1,

Table 1 Transport Canada's Environmental Management System Framework

Environmental impact	Objectives	Targets	Actions	Performance indicators
Fuel consumption	To reduce exhaust emissions from Transport Canada's fleet vehicles	40% of new vehicle purchase between 2004 and 2006 to be alternative fuel vehicles	Purchase alternative fuel technology vehicles	Percentage of alternative fuel vehicles of total annual vehicle purchases

Adapted from Transport Canada's SDS, 2003.

with pressure represented by environmental impact and the target representing the response part of the PSR framework. The state is not represented.

Several reviews have been undertaken to improve the sustainable transportation performance indicators method. An early report from six regional workshops (Transport Canada, 1996) summarizes the general views of the framework as 'reasonably useful, though sometimes difficult to apply to transportation issues'. Comments from participants included: difficulty of cross-modal comparisons of the indicators with too much focus on physical/environmental indicators; the need to represent costs as well as benefits and to have local/regional indicator subsets and benchmarks for the chosen indicators and lack of collaboration with the indicator work of other government entities. Numerous participants also noted that the framework remains very broad and at high level. There were calls for a more explicit and concrete long-term vision with more tangible objectives. The framework itself was not extensively debated during these workshops and was considered generally accepted.

Several of these criticisms are being addressed in the 2004 SDS, with a focus on more tangible objectives and an effort to incorporate social and economic indicators as well as environmental ones. A 2004 review of the 2001-03 SDS (Transport Canada, 2004) identified future improvements as those of defining the commitments so that they are clear and achievable, including better linkages between commitments, targets and performance measures and making performance measures more result-oriented and meaningful. The review cited recent accomplishments of Transport Canada as: a reduction in the number of commitments and targets by about 40%; and increased performance measures for the targets. A full application of the PSR framework may be difficult for Transport Canada, but its continued commitment to improving the format for measuring performance and the ongoing review of the results are commendable.

Conclusion

We need to include the Bellagio Principles in the evaluation process, but those alone are not enough to assure improvements. These evaluation methods demonstrate public participation in the development and review of the program, clarity of presentation in a graphical or easily understood format, regular application of the program with legislative and budget guarantees or the establishment of clear targets that can be adjusted as conditions change. Most of them also include all of these elements or are planning to do so. However, their achievements to date in improving community health have been limited. What else is lacking than these principles and can evaluations indeed help improve community health?

Ironically, it is the ecological footprint with only one application to clarify in Sonoma County and its simplistic data aggregation that has had the most noticeable impact on galvanizing community action. Its graphical representation of Sonoma County's footprint made clear that the largest percentage of the footprint is fossil energy. Implicit is the target of reducing the footprint. This helped to motivate all county jurisdictions to commit to limiting the effects of climate change. Re-evaluation of the footprint will determine the success of these efforts. This suggests that fewer, easily understandable indicators that demonstrate where improvements need to occur can motivate the community more than numerous indicators can, even with targets, public participation and regular re-application.

Furthermore, the Ecological Footprint can be applied to the individuals and groups of a community, such as its businesses, schools, non-profit groups and neighborhood and trade associations. Residents of Sonoma County can assess their own footprint to make improvements. There is a limit as to what government bodies can accomplish without business and individual efforts, particularly with their budget uncertainties and political mandates.

In conclusion, therefore, it is suggested that, while evaluations are an important first step, greater emphasis be placed on civic responsibility for improving community health from the individual on up. Knight and Stokes (1996) associate the dominance of market forces with the decline in civic responsibility. Can the two co-exist? Business evaluations do not usually indicate positive or negative impacts to the community by the business (Becker, 2002). Businesses do assume more responsibility for their practices once there is pressure and awareness to do so and still remain competitive (Schmidheiny, *et al.*, 2002; Porter and Van der Linde, 1996). Sustainable Seattle has realized that its businesses must be included in achieving improvements. Improvements in the smallest communities have a cumulative influence on the larger ones.

The use of indicators to educate and generate public support may be required first (Brugmann, 1997). But these indicators may not be the same ones that will guide action. If evaluations are to translate information into action, the indicators should themselves be evaluated for their ability to improve sustainable development, possibly by using a framework (Bossel, 1998; Becker, 2005) and for their resonance with public sentiment. Oregon and Seattle are both working on this to rally public commitment and to help ensure that their results will indeed contribute to community health. Indicators can point the way, but they will not necessarily lead to improving community health without ongoing commitment within and between communities. These evaluation methods show promise that their continued refinement can ultimately produce evaluations that resonate with the community to motivate that commitment.

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