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TOWARD SUSTAINABLE COMMUNITIES

Revised Edition

RESOURCES FOR CITIZENS AND THEIR GOVERNMENTS

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TOOLS FOR COMMUNITY SUSTAINABILITY

Moving toward sustainable communities is a long-term goal, so it is important that the incremental steps we take in the short-term are leading us in the right direction. This chapter surveys some of the many tools available to citizens and their governments for managing community sustainability, and then discusses one of these tools, sustainability indicators, in more detail.

The tools described below (adapted from ICLEI et al., 1996 and Levett, 1997, unless otherwise indicated) are organized into two categories: planning tools and assessment tools. Community planning and assessment tools can sometimes be conducted by citizen groups with little training, whereas technical planning and assessment tools more often require the involvement of trained staff or consultants. The latter may not lend themselves readily to public participation, but citizens can participate more effectively in decision-making if they know about many of the tools available to their communities. These tools can be complementary and used in parallel (Robért et al., 2002).

PLANNING

Community Tools

Several community planning tools are useful for awareness building, problem diagnosis, and dialogue and participation in decision-making. These tools can be used from the pre-planning through to the evaluation stages of the planning process. Relatively familiar or self-explanatory tools include brainstorming, community meetings, field trips, media campaigns, open houses, public hearings, public meetings, role playing, vision building, and workshops. Popular education and search conferences are less well known.

Popular Education: The tools of theater, sculpturing, puppet shows, and storytelling have developed in communities where development practitioners and educators have worked. Popular techniques engage the community in the identification and critical analysis of issues, information gathering related to these issues, and problem-solving and decision-making methods. Popular education can enhance people's capacity to participate in decisions and actions affecting their lives.

Search Conferences: These are two- to three-day strategic community planning conferences designed to engage stakeholders in planning and managing the future. A search conference entails building consensus on a vision of the future as a basis for planning within and among all sectors. Future possibilities and trends rather than current problems or risks are the focus of subsequent action planning. The elements of a search conference include a review of past and current trends, an analysis of external and internal forces, the creation of a future vision, and development of an action plan.

Technical Tools

The following technical planning tools are used to establish environmental carrying-capacity limits and human impacts on them, and to guide policy.

Ecological Footprint Analysis: This tool estimates the land area required by any human activity, both directly — the land occupied by buildings or infrastructure — and indirectly — including the land needed to grow crops and assimilate pollutants. The ecological footprint may offer a meaningful single measure of all global ecological impacts of human activities, at household, municipal, national, or global levels. The degree to which the footprint of human activities exceeds the total productive area is a measure of unsustainability (Wackernagel and Rees, 1996).

Environmental Space: The maximum sustainable rates of human use of key resources (energy, selected non-renewable resources, land, wood) are estimated, and then the resources are divided evenly among the world's population to give each individual's entitlement. The extent to which any country (or household) exceeds this is a measure of unsustainability. The calculations support calls for a ten-fold "dematerialization" of Western lifestyles.

Community-based State-of-the-Environment Reporting: The intention is to develop broad perceptions of ecosystems and our relationships with them, and to identify ecological approaches to planning and designing urban areas, on which residents and governments can ponder and act. As with all state-of-the-environment reporting, the question of appropriate indicators presents a major challenge, especially at the local government level. Ideally, state-of-the-environment indicators should be key measures that most represent the state of the environment and that collectively provide a comprehensive profile of environmental quality, natural resource assets, and agents of environmental change.

Sustainability Reporting: This is state-of-the-environment reporting broadened to include quality of life as well as aspects of sustainability; it is focused on information needed to guide decisions and action.

Environmental Budgeting: Local carrying capacities are used to set budgets for the maximum amount of environmental impact permissible in the municipal area. For example, the water extraction budget would be based on replenishment rates. The municipality works with all environmental consumers to keep impacts within budget. More consumption of water by households, for example, would have to be offset by less consumption by industry, or by more recovery/treatment of wastewater.

ASSESSMENT

Community Tools

Assessment tools are used for figuring out where we're at, and for monitoring and evaluating where we're going. Some familiar or self-explanatory community assessment tools include risk assessment, focus groups, periodic monitoring reports, ranking, and surveys. Some less familiar assessment tools are described below.

Community Case Studies: These are collective descriptions and analyses of the community and its problems, documented in a local language or medium (e.g., drawing, storytelling, role playing, audio-visual). They can be used to promote awareness and discussion among community members, and to gather baseline information for assessment.

Community Environmental Assessment: Stakeholders can be involved in gathering information and analyzing the environmental and social impacts of proposed activities to predict their positive and negative effects. Designed for group observation and value judgment, the importance of any impact is determined by the community and given numerical value, such as environmental and social scores. Although not useful in themselves, these scores can be used to facilitate priority setting and to identify indicators for monitoring and evaluation.

Community Interviews: Interviews are a form of surveying in which all members of a community are invited to a meeting to answer specific pre-set questions. Discussion is restricted because the meeting size is large, so this tool is not useful for consensus-building; but it gathers preliminary information on community perspectives or solicits feedback on proposed strategies and actions.

Force Field Analysis: This is a facilitated and structured exercise in which participants identify specific hindering and facilitating forces affecting the functioning of any situation, assess the relative strength of each force, and plan alternative actions to overcome or promote these forces. It is useful for achieving a shared understanding of opportunities and constraints that can influence a desired goal, which helps participants determine effective strategies and priorities.

Geographic Information Systems: GIS is a computer-based data system for the storage, easy retrieval, manipulation, transformation, comparison, and graphic display of data. Intensive (and perhaps expensive) data gathering is often required, but once established, GIS can provide a user-friendly source of information that can be manipulated by non-experts as well as experts. In some communities, GIS systems have been used by community "watch-dogs" to monitor local environmental situations.

Community-Based Mapping: Mapping involves residents in the pictorial construction of information about their community. During a mapping exercise, maps are constructed from local knowledge and observation, and provide an excellent starting point for discussion about community-based issue identification, analysis, and problem-solving.

Oral History: This is a participatory technique for information sharing during the analysis of local issues. Historical accounts can be compared with present information to generate an analysis of underlying trends and structural problems in a community, and can be used to inform residents about the history of changes and development in their community.

Service Issues Mapping: This facilitated group brainstorming and analysis technique helps stakeholders "map" the diverse issues that must be considered in order to address a single priority issue. This exercise helps people see the systemic nature of local problems by highlighting complex sets of relationships among issues and by identifying different stakeholders who need to be involved in problem-solving.

SWOT Analysis: Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis is a strategic planning tool that aids in the formulation of attainable long-range goals, action programs, and policies. Strengths and weaknesses refer to internal factors in the community, such as resources or declining budgets. Opportunities and threats refer to outside influences that could benefit or damage the community.

Technical Tools

Environmental Impact Assessment and Social Impact Assessment: These comprehensive tools integrate environmental and social considerations into project planning, development, and implementation. To be effective, assessment must be a decision-making tool. The application of an effective assessment process ensures that potential environmental and social effects are identified and mitigative measures put in place to minimize or eliminate these impacts. Effective assessment requires that the environmental and social implications of a proposal be considered prior to taking or making irrevocable decisions and as early in the planning process as possible. The assessment of a proposal should include the concerns of the public with regard to both environmental and social evaluation (City of Ottawa, 1990).

Sustainability Appraisal: Appraisal of activities, projects, programs, plans and/or policies applies to social and economic sustainability criteria as well as environmental ones, and considers their integration and reconciliation.

Environmental Audit: Such an audit is based on an assessment of the environmental impacts of a government's policies and practices. In some cases these will be known or easily identifiable, while in others, it will be possible only to indicate the likely consequences. The policy review should encompass all activities of the government, and all departments and arms of its service. It should not be restricted to official or approved policy, because much local government practice has evolved through tradition, or results from informal decisions of staff.

Environmental Action Planning and Management: This tool is a variation of an environmental audit; it involves setting environmental objectives, implementing environmental improvement actions, and monitoring and reporting on their effectiveness

— in other words, applying familiar "management by objectives" to environmental effects.

Eco-Management and Audit System: Another variation of an environmental audit, an eco-management and audit system is a formal management systems standard for environmental "management by objectives." Originally designed for the manufacturing industry, it has been adopted for municipal use in the UK. A proposed update is "sustainability management and audit system," which includes social and economic aspects of sustainability, and strengthens involvement of stakeholders in setting criteria and assessing performance, according to social audit principles.

Social Auditing: Just as financial accounting measures financial performance, social auditing measures social performance by better understanding its relation to the goals and key stakeholders of an organization. Social auditing is increasingly popular with large private institutions such as Ben and Jerry's Ice Cream, The Body Shop International, and VanCity Savings Credit Union. It can also be applied to smaller businesses, community enterprises, cooperatives, non-governmental organizations and public bodies (Pearce et al., 1997).

Sustainability Indicators: This effective tool for communities and governments to evaluate their progress toward sustainability is discussed below.

TOOLS IN ACTION

In June, 1992, the United Nations Conference on Environment and Development established Agenda 21, a sustainable development action plan for the 21st century. That plan includes a proposal made by the International Council for Local Environmental Initiatives (ICLEI) to support local governments in the development of their own Local Agenda 21s. ICLEI's Local Agenda 21 Initiative (ICLEI, 1993) provides a common vehicle for local governments to strengthen local environmental planning. From 1992 to 1996, approximately 1,200 local governments in 33 countries established Local Agenda 21 campaigns (Brugmann, 1996).

A Local Agenda 21 campaign can be any participatory, local effort to establish a comprehensive action strategy for sustainable development in that local jurisdiction or area. All local governments are urged to complete their campaigns and strategies and to report their results to both the United Nations Commission on Sustainable Development and to ICLEI. The proposed planning framework is based on the following four elements:

- *Community consultation processes*, such as round tables, to achieve input and participation from every sector;
- *Sustainable development auditing*, to provide sound information about current conditions;
- *Setting sustainable development targets*, both near and long-term, for quality of life, environmental quality, resource consumption, and human development; and
- *Development and use of indicators*, to inform the community about the impact

The indicators a society chooses to report to itself about itself are surprisingly powerful. They reflect collective values and inform collective decisions. A nation that keeps a watchful eye on its salmon runs or the safety of its streets makes different choices than does a nation that is only paying attention to its GNP. The idea of citizens choosing their own indicators is something new under the sun — something intensely democratic (Meadows, 1972)

of its programs and investments upon the sustainable development of the community.

Sustainability Indicators

Why are sustainability indicators important? According to Osborne and Gaebler (1993), what gets measured tends to get done. If you don't measure results, you can't tell success from failure. If you can't recognize success, you can't reward it. And if you can't recognize failure, you can't learn from it.

The steps involved in developing sustainability indicators are: clarify goals — the aim of the evaluation and the type of desired outcome; determine who will lead the process; invite participation — the process of evaluation may be as valuable as the eventual application of the indicators themselves; decide how to choose indicators; collect data by which to measure the indicators; report on the indicators; and update and revise the indicators. (For details on these steps and related issues, see Azar et al., 1996; Brugmann, 1997; Forss et al., 1994; Kline, 1997; Maclaren, 1996; McLemore and Neumann, 1987; Papineau, 1996; Parker, 1995; Schön and Rein, 1994; Schwandt, 1997; Waddell, 1995.)

The following initiatives are a small sample of ongoing and emerging projects to design and use sustainability indicators. They represent the spectrum of aims for which sustainability indicators can be used — from the Sustainable Seattle Project, with a focus primarily on community education and empowerment, to the Oregon Benchmarks project, with a greater focus on providing feedback to government agencies.

Sustainable Seattle Project: The Sustainable Seattle Project began in 1992 with a meeting of 150 citizens. During this gathering, 99 indicators were proposed and 40 key indicators were selected; the first 20 of these indicators were assessed in 1993, and in 1995, the remaining 20 were assessed. Indicators ranged from total water consumption, per capita waste generation, and recycling rates to volunteering in schools and household incomes. The Sustainable Seattle Project plans to update and improve their indicators on an annual basis.

The people behind the Sustainable Seattle Project believe that "measuring progress is not the same as making it." The project promotes action by encouraging Seattle-area citizens to:

- employ local media to spread indicator results and analysis;
- use the political process to promote change in public policy;
- broaden the information base used for economic decision-making;
- use indicators in schools for education and as a basis for additional research;
- form a basis for linking local nonprofit and volunteer groups; and
- question personal lifestyle choices.

Willapa Bay Indicators: In southwest Washington State, the Willapa Bay Indicators Project is evaluating the environmental, social, and economic sustainability of a rural watershed. The Willapa indicators explicitly tie the health of the environment to the vitality of the local economy and community. Environmental indicators are divided

Goals, Targets, and Indicators

In 1994, the Santa Monica Task Force on the Environment developed a Sustainable City Program in partnership with the City of Santa Monica Environmental Programs Division. Each of the program's policy areas has clear goals reflecting the city's current and future programs. Specific targets were established for each goal, and an indicator was established for each target, as in the example below (ICLEI et al., 1996):

Policy Area: Community and Economic Development

Goals

- Encourage the development of compact, mixed-use, pedestrian-oriented projects.
- Promote the growth of local businesses that provide employment opportunities for Santa Monica residents.
- Facilitate education programs that enrich the lives of all members of the community.

Targets

- Provide 750 additional affordable housing units.
- Create three new community gardens.
- Establish partnership with local schools to create and complement a Sustainable Schools program.
- Increase total public open space by 15 acres.

Indicators:	1990 (Actual)	1993 (Actual)	2000 (Target)
Deed-restricted affordable housing units	1,172 units	1,313 units	1,922 units
Community gardens	2 gardens	2 gardens	5 gardens
Creation of a Sustainable Schools program	n/a	n/a	implemented
Public open space	164 acres	164.8 acres	180 acres

into three categories: water resource quality, land-use/vegetation patterns, and species populations. Economic indicators are included under the categories of productivity, opportunity, diversity, and equity. Finally, community measures fall under life-long learning, health, citizenship, and stewardship.

The Willapa Project links with other community groups and organizations. A joint effort by the Willapa Alliance and Ecotrust, the *Willapa Indicators for a Sustainable Community* report is intended to promote discussion of sustainability issues in the local communities. Published as a companion volume to the indicators report is *The Directory of Organizations and Services in Pacific County, Including Key Government Officials*. And among other projects, the Alliance formed the Willapa Science Group, a group of local and regional scientists and educators who encourage scientific research that is meaningful to local people.

Hamilton-Wentworth's Sustainable Community Indicators Project: In Ontario, Hamilton-Wentworth's Sustainable Community Indicators Project arose out of the regional municipality's Vision 2020 initiative. This vision of a sustainable future was developed by a citizens' Task Force on Sustainable Development appointed by the regional council; over 400 individuals and 50 community groups took part in the visioning process (Maclaren, 1996). The Indicators Project measured progress toward the goals outlined in the Vision 2020 document, and drew on participation of the community throughout the process. While the final set of indicators are intended for decision-makers, the prime goal was developing a set of indicators which were understandable and useful to local citizens.

Oregon Benchmarks Program

The Oregon Benchmarks process resulted from the State of Oregon's strategic plan, *Oregon Shines*. A multi-stakeholder organization supporting the plan, the Oregon Progress Board, presented a reporting framework to the state legislature after extensive consultation, and the benchmarks process was officially adopted in 1991.

The framework for reporting consists of 269 indicators. Rather than simply present indicators to measure and report trends, however, the Oregon process defines targets, known as benchmarks. The benchmarks cover a diverse range of issues around sustainability, including categories such as children and families, education and work force, health and health care, clean natural environment, equal opportunity and social harmony, and economic prosperity. The Board publishes a report card every two years to report on progress toward the stated targets.

While the Oregon Benchmarks program has drawn on public consultation and aims to inform the public, its main strength is its ability to promote action and accountability in the state government. Rational and clear sustainability goals have formed the basis for strategic planning throughout government agencies. The legislature even passed several bills directing agencies to work toward benchmarks. On a smaller scale, the Oregon Benchmarks are being applied by municipal governments and community organizations, and several cities and counties are adopting strategies to complement the state program.

The Need for National Indicators

It is too early to judge the impact of local and regional projects on community sustainability over the long-term, but they seem to be helping communities move in the right direction. Many researchers have also recognized the importance of developing sustainability indicators at the national scale. Currently, much national policy is driven by trends in GNP, which only considers narrow economic measures of a country's well-being; sustainability, including

Redefining Wealth

"In September 1995 the World Bank introduced a preliminary new index of national wealth which includes natural capital (environmental resources), produced assets (factories, infrastructure, financial assets — what is usually measured by the GNP), human resources (educated, healthy, productive people) and social capital (families, communities, institutions). Moreover, the World Bank acknowledges that 'produced assets' account for only some 20% of national wealth, while natural capital accounts for another 20% and human resources and social capital between them account for the remaining 60%. From this perspective the wealthiest nation in the world is Australia (with 70% of its wealth based on its land and natural resources) followed by Canada (also rich in natural resources) in second place. Luxembourg, Japan and Sweden (3rd-6th place) owe their wealth mainly to human capital, as does the USA which ranks 12th on this scale" (Henderson, 1996).

trends in natural and social capital, is not considered. Effective indicators of national sustainability would provide important information for citizens and governments supporting initiatives at the local and regional level.

RESOURCES

The **Community Based Environmental Protection** division of the EPA provides publications and toolkits to help communities develop locally unique multiple-stakeholder processes for environmental problem solving.

Website: www.epa.gov/ecocommunity

Community Indicators Project is an initiative of Redefining Progress with the goal of linking existing and emerging indicator projects, and facilitating the development of more initiatives. The main products being developed by CINet include the *Community Indicators Handbook*, the CINet web site, and an e-mail discussion group, RP-CINET, for the exchange of information. These products promise to be a significant contribution to providing accessible and relevant information to groups interested in sustainability indicators.

Website: www.redefiningprogress.org

Guide to Sustainable Community Indicators by M. Hart (Ipswich, Mass.: QLF/Atlantic Center for the Environment, 1999) is a useful guidebook describing the entire process of developing and implementing sustainability indicators at the community level. The guide includes sample indicators, list of projects, and references. The author has also developed an excellent website.

Website: www.sustainablemeasures.com

The **International Institute for Sustainable Development** has compiled *Compendium: A Global Directory to Indicator Initiatives*, the best place to start.

Website: www.iisd.org/measure/compendium/

Life in Jacksonville: Quality Indicators for Progress is available from:

Website: www.jcci.org/statistics/statistics.aspx

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Website: www.neweconomics.org

Oregon Benchmarks reports are available from the Oregon Progress Board.

Website: <http://egov.oregon.gov/DAS/OPB/>

Sustainable Seattle is a resource and a catalyst for urban sustainability. Their indicators report is on their website.

Website: www.sustainableseattle.org

Vision 2020 is Hamilton's long term vision of a vibrant, healthy, sustainable future shared by local government, citizens, business, groups and organizations. Vision 2020's Sustainability Indicator's Report is available on-line.

Website: www.vision2020.hamilton.ca/

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