Indicators of Sustainability:

Applying Lessons to the Ithaca Area

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Introduction

According to the website of ACT Rochester "over 1,000 communities around the world have undertaken indicator initiatives." (http://actrochester.org/FAQ). This report draws on a quarter of a century of efforts, especially but not exclusively in the United States, and provides a recommendation for the Ithaca area. It begins with a case study of Sustainable Seattle (S2), which provides a living example of some of the benefits and pitfalls that are discussed in subsequent sections of this report.

S2 was chosen because it has influenced other communities through widely-distributed written reports, presentations to national and international conferences (1991 to present), consulting on a contract basis (begun in 1995) and most recently a website, www.b-sustainable.org, built using open-source software that others are invited to use and adapt (launched 2008). Despite its two decades of rocky history, it has been held up as the poster child for sustainability indicators. S2 was used in the Bellagio Principles (The International Institute for Sustainable Development, 1997) as a case study to illustrate Principle # 8: Broad Participation. Maureen Hart of Sustainable Measures states, "Although not the first community group to work on issues of sustainability, Sustainable Seattle is one of the most well known groups that have developed indicators." Meg Holden's chapter entitled "Sustainable Seattle: The Case of Prototype Sustainability Indicators Project" was selected for inclusion *Community Quality-of-Life Indicators: Best Cases II*. Holden's chapter, www.sustainableseattle.com and www.b-sustainable.org were key resources for this section. Quotes are from Holden unless otherwise noted.

Sustainable Seattle

Three years after the 1987 World Commission on Environment and Development, over 150 civic leaders met at the day-long Sustainable Seattle Forum to "break new ground in order to build more effective structures and institutions that will govern the lives of coming generations. The process included listing existing conditions, desired future conditions, and up to 70 related indicators." The process was hosted by the Washington, D.C. based Global Tomorrow Coalition. The event prompted a team of six to continue meeting nearly weekly for one year. Those meetings led to forming a larger Board of Trustees that would guide Sustainable Seattle through its first 5 years.

The Board of Trustees had seven ambitious goals, one of which was focused on indicators. Goal five stated: "To monitor sustainability through developing indicators of economic, cultural, and environmental health." This goal spawned one of the original three teams and the creation of ten panels comprised of civic leaders with interest and expertise in specific areas such as education, health, transportation, social environment and natural environment. Each panel was to define key and secondary indicators, plus indicators that were difficult to measure but provocative.

The result was 99 key indicators, which would later be winnowed down to 20 for initial reporting. The effort was "the best example of the organization at its prime" according to Holden. The work established a community vision and excitement about the potential of collective action. The first report took at least 200 volunteers 2500 hours to prepare. The second report took even more effort and engaged at least 250 volunteers. The third and final report of this type, released in April 1998, was created by 75 volunteers, almost of all of whom were new. The original set of volunteers had burned out.

In those early days reporting on indicators was the focus of S2, despite the existence of 6 other goals. Furthermore, the indicators were not linked to actions or policy changes. Volunteers reported being overwhelmed by the effort to produce the report and frustrated by the lack of direction on how to make progress on sustainable issues – progress that could be reflected in the indicators report. Additionally, S2 struggled through the typical development stages of a new organization or project. One founding member noted that those involved spent more time on organizational issues than sustainability concerns.

The initial heydays of enthusiasm prompted "a dozen new initiatives…most of which flounder". As S2 continued, enthusiasm waned and there was less community involvement. By 1997 the spirit and joy of working together, which was held to be part of the essence of S2, had been lost. Energy and productivity spiraled downward through 2001. Perhaps as an indication of the decline in S2, the organization was not included in a report on the six jurisdictions that were leaders in sustainability initiatives (Abbott Strategies. 2002).

A decade after its inception the Board considered folding. This was averted in part because a new Board member, who was a principal of Cascadia Consulting, offered S2 office space and an executive director.

By 2003 the Board determined that the regional indicator project, as it was then called, was best suited for government. S2 was interested in taking a supportive rather than central role. Sustainable Seattle remained a contributor to *Community Counts*, a report released every three years on 38 social, health, environment and arts indicators for King County, WA (www.communitiescount.org).

Holden's analysis stops with the status of S2 in 2004. She summarized these initial 14 years of S2 as being ones of "tumultuous, evolutionary change".

S2 continued to evolve. New projects included a curriculum to put sustainability into action, awards for community leadership and defining indicators at the neighborhood scale through the Sustainable Urban Neighborhoods Initiative (SUNI). That project worked with ten neighborhoods and had the stated goal of spurring action. The third-year report (www.sustainableseattle.org/Programs/SUNI) showed progress only through the steps of building relationships, conducting surveys, identifying potential indicators and collecting data. Though described as a four-year project, no report was available for year four and elsewhere on the S2 website SUNI is described as only lasting 3 years. No mention could be found of community actions that resulted from the effort.

In 2005, fifteen years after the original Sustainable Seattle Forum, S2 again gathered together civic leaders. This time the focus was to address the sustainability of Central Puget Sound. Three years of effort followed. Input from a technical committee, civic leaders and data partners resulted in a suite of 22 goals that are linked to strategies, initiates, actions and indicators of progress under a project called B-Sustainable. It tightly tied indicators to actions using a framework of four environments: natural, built, social and personal. Each environment lists goals under which are sections describing what is happening, why is it happening and why is it important. Each section has indicators. The website states, "B-Sustainable Information Commons is Sustainable Seattle's fourth iteration of regional indicators for sustainability" (www.b-sustainable.org).

Currently the S2 website lists four program areas, one of which is Indicators into Action. B-Sustainable and *Community Counts* are two of the four programs under the Indicators into Action program area.

Another program within the Indicator program area is Community Development, which encompasses the neighborhood-based work. SUNI, the original neighborhood initiative, has been revamped and is being tested with 2 pilot neighbors. Phase I, Developing a Sustainability Scorecard, was begun in April 2009. The scorecards were closely linked to strategies and neighborhood-level action plans. Each neighborhood received $1,500 (from a City of Seattle Department of Neighborhoods grant) to fund their project. Phase II, Neighborhood Action Projects, began in the fall of 2009, too recently to have been evaluated.

The final program within the Indicators program area is Policy Hub on Community and Urban Sustainability. This is envisioned as an on-line resource with components for policy makers and citizens, notably the "Citizen's Guide to Democracy". It is not yet available.

Twenty staff are listed on the website as carrying out the above and the remaining two program areas:

- "Emerging People, Projects, and Ideas Program Area Goal: Develop innovative people, projects, and ideas around cutting-edge sustainability
- Community Connections Program Area Goal: Build a network of diverse sustainability practitioners to address challenges, opportunities, and share successes"

Indicators endure after all the changes S2 has gone through. The most recent effort is developing indicators to evaluate the performance of S2, especially in relationship to collaboration, transparency and equity. A report is planned for 2010.

What Does This Mean For Ithaca?

Expect working with indicators of sustainability to be challenging. The path is not linear or smooth. The process takes time and requires a dedicated core cadre as well as the involvement of key civic leaders and a pool of volunteers. New volunteers will need to be recruited along the way. There may be multiple points along the way that look like failure.

Indicators needed to be closely linked to goals, policies and actions and not presented as an end. The reporting phase alone will take significant time. A staff member of the Tompkins County

Planning Department estimated it takes at least one full-time month of staff time to complete the department's annual Indicators of Success report. Given that regular reporting is part of what makes indicators useful and given the resources needed to create the reports, it will be important to think through where that responsibility should be housed.

What is Sustainability?

In 1983, the Secretary-General of the UN established a commission called the World Commission on the Environment and Development. This commission is frequently referred to as the Brundtland Commission, after Gro Harlem Brundtland, the head of the commission and formerly the Prime Minister of Norway. The Commission created "Our Common Future", a document better known as the Brundtland Report, that focused world attention on sustainable development which it defined as "..development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Many groups and organizations use this or variations of it as the basic definition of sustainable development. The Brundtland Report recognizes that sustainability is more than the natural environment. It goes onto say, "Sustainable global development requires that those who are more affluent adopt lifestyles within the planet's ecological means.....Sustainable development can only be pursued if population size and growth are in harmony with the changing productive potential of the ecosystem" (World Commission on the Environment and Development, 1987).

"Sustainability" is a more contemporary term. Farrell and Hart (1998) note that there is no widely accepted definition of sustainability. Their review of many definitions found "Three concepts in particular are reflected in many of these definitions: that natural resources are finite and there are limits to the carrying capacity of the Earth's ecosystems; that economic, environmental, and social goals must be pursued within these limits….(Sustainability is) very concerned about equity, both within and between generations. Intergenerational equity, of course, entails leaving future generations an ecologically viable planet with abundant resources, while intragenerational equity entails distributing the environmental costs and benefits fairly among people living now. Both forms of equity are based in part on concerns about the morality of some people living well at the expense of others. … (A definition) that incorporates elements of both views (of equity)-might be the following: "improving the quality of human life while living within the carrying capacity of supporting ecosystems."" The City of Albuquerque compiled a four page listing of definitions of sustainability used in US cities (available at www.cabq.gov/albuquerquegreen/defining-sustainability).

Other reoccurring sentiments found in the readings were that:

- sustainability is a process not a state; it is never achieved
- a key to sustainability if having systems (natural, cultural, financial, etc.) that maintain the capacity to change
- sustainability could not be accurately measured and
- "(S)ustainability is not a theoretical concept, but a measurable approach with well defined quantitative performance indicators of how to manage our economy and our society." (Telfer School of Management 2009)

As long as there is no clear definition of sustainability, it is difficult to come to an agreement on whether or not sustainability can be measured. Yet extensive local, national and international

efforts point to a persistent interest in measuring sustainability and to the use of indicators as a key method. Currently the number of indicator projects registered in The International Institute for Sustainable Development Compendium (www.iisd.org/measure/compendium) is 844 world wide, of which 74 are in the US. Repeatedly, the process of selecting indicators is seen to be the best way to make progress on defining sustainability.

What Does This Mean For Ithaca?

A member of the Cayuga Sustainability Council noted that members of the group did not agree on a definition of sustainability; this is understandable. Whether with this group or the larger community, spending time focused on a common definition of sustainability may not be as productive as framing the discussion around a vision of what Ithaca would be like if it was sustainable. Likely there would be common elements about which people could agree. Because there is no consistent definition of sustainability, it might be best to avoid that term and find an alternative name (for convenience the term will continue to be used throughout this report). In addition some segments of the population may associate sustainability with only the environment protection or as not relevant to people like themselves. This would especially be a problem if the term selected alienated people who are already less likely to participate in this sort of process --- people who are lower-income, less educated or in communities of color.

What Are Indicators And What Is Their Value?

When a parent takes a child's temperature to judge the child's health, an indicator is being measured. This example is simple but similar to how indicators are used to evaluate more complex conditions or goals. "An indicator …describe(s) an economic, environmental, social or cultural condition over time. An indicator is usually expressed as a rate or percent, such as the infant mortality rate, the unemployment rate or the air quality index" (actrochester.org). "Indicator initiatives attempt to gather quantitative and qualitative information on factors considered to be indicative of a municipality, county or region's performance in subset areas of sustainability…highlighting movement toward (or away from) desired conditions." (parenthesis original. ICEI, 2008a).

Indicators do not stand alone but are part of a process of achieving a goal. Goal identification such as a healthy lake, racial equity within a community or jobs for all is a common starting point. An indicator is an activity or condition that can be monitored or measured to assess progress. For example, a reproductive population of predator fish species could be an indication of a healthy lake. Measures are the data – the actual units or analysis – used, such the number of salmon fry collected at a set location at a set time of year. The term indicator is sometimes used in a way that blends the indicator and the measurement.

The process can also be worked in the opposite direction when data is gathered in an exploratory way such as collecting water quality data. Data analysis can lead to the development of a goal and adjustments made to improve the indicator. Measurements would continue to be taken to monitor progress toward the goal (Blake, 2009).

Indicators are generally reported in one of three ways: individually, as part of a set or as a composite index that combines individual indicators (often weighted) into a single number. It is difficult to come up with a single indicator for a complex system such as a lake or race relations.

A set of indicators can be more informative and still be accessible to the general public. An index is the aggregate of diverse measurement to create a single number. It can be useful in communicating information to the public and decision makers, especially once is it well established and trusted such as Gross Domestic Product. However, the appropriate methods to use in developing a new composite index are controversial (Farrell and Hart, 1998).

Indicators make use of the best available data. Some things are difficult, expensive or impractical to measure and so indicators serve as proxies. For example, direct-to-consumer farm sales may have to serve as the best measure for local food production even though it leaves out small roadside stands. As a proxy, "indicators may not always meet strict scientific demands to demonstrate causal chains. Indicators should therefore be regarded as an expression of 'the best knowledge available' " (Organisation for Economic Co-operation and Development, 2003).

Indicators are valuable when they are compared to a benchmark to measure trends. The benchmark can be a past point in time such as the amount of solid waste generated in Tompkins County in 1997. A benchmark can be other locations such as comparing the quantity of waste generated in Tompkins County to other communities in the northeast. If the trend is not in line with the goal then an indicator can guide the development of action steps to change the trajectory of the trend.

A good indicator is responsive, meaning when a change is made in the system, the indicator changes. For complex system the response is not likely to be immediate meaning that indicator often provides the greatest value when data is collected and analyzed long-term.

The process of selecting and defining indicators often takes two to three years and can be difficult. Rather than being something to be endured, the process is described as providing as many benefits (SustainableSeattle.org & Farrell and Hart 1998).

Here is a partial list of benefits of developing and using indicators gleaned from the readings:

- Builds relationships
- Defines sustainability in concrete terms
- Makes unspoken goals explicit
- Can push a community to define larger goals than it might otherwise
- Helps clarify objectives and set priorities
- Forces the community and individuals to wrestle with values
- Creates a sense of common purpose
- Builds a common agreement about current reality
- Can inspire people to look at things in a new way
- Changes the understanding of a problem that allows for better solutions
- Opens the door to deeper exploration of important issues.
- Prompts thinking about interconnections and linkages (systems thinking)
- Shows the links between social, environmental, and economic goals
- Rises awareness on the need for more sustainable life styles and options
- Provides an easy way to document and communicate success
- Highlights strengths to be built on and weakness that need to be addressed

- Brings together different trends into one broad picture
- Able to influence public policy and decision making
- Useful for grant proposals and annual reports
- Provides earlier warning signs to unsustainable trends or environmental degradation
- Illuminates trends that might otherwise have been missed
- Informs program planning
- Provides project evaluation
- Increases understanding of sustainability that can lead to political engagement and changes in consumer behavior
- Builds justification of policy changes
- Reduces the number of measures and parameters that normally would be required to represent a situation
- Helps identify data gaps

What Does This Mean For Ithaca?

Indicators are one piece of a whole. Emphasis should be placed on the larger process such as defining a vision of sustainability and identifying actions steps and less on the adoption of the best indicators of sustainability. Indicators are a tool in moving a community to be more sustainable.

Emphasis should be placed on the benefits of the process. Most of the benefits listed above would help move Ithaca towards being more sustainable even if that movement might be unrecognized in the short term or not easily quantified (such as building relationships or a deeper exploration of issues). If a sustainability indicators project is undertaken, there should be a clear sense (and I would argue broad sense) of what constitutes success. What I have heard second hand about the Rockwood Leadership Training will be used as an example. The group would have failed if success had been defined as the group articulating a common vision that in turn lead to a big, hairy, audacious goal (aka BHAG, a term coined by James Collins and Jerry Porras in the book *Built to Last*). The training was a wild success if success was defined as developing the leadership of the participants. How success if defined matters to the participants. A different definition of success may have left people with better feelings about the Tompkins County Quality of Life Committee effort (see next section).

Short Comings, Pitfalls and Challenges

Proponents of indicators like Peter Drucker's adage, "you can only manage what you measure", while the skeptics favor, "you get what you measure" and Donella Meadows' (1998) caution about the tendency to "measuring what is measurable rather than what is important". While these quips are telling, a more reoccurring point of divergence is the relative merits of a customized, local approach compared to value of a more standardized set of indicators that are aligned with national strategies for sustainable development and/or with broader international goals such as the Millennium Development Goals.

Establishment of a standard national framework might preclude the problems found with an effort in New England. Evaluation of a multi-year effort to establish common environmental indicators across six states and the regional EPA office found, "Unclear indicator language,

variability in definitions and criteria, variability in data collection methodology." The report stressed, "For an indicator to have meaning at a regional level, there needs to be consistency in both data sets (e.g., in the same units, over the same time period, etc.), and methodology" (Green Mountain Institute for Environmental Democracy (GMIED) 1999).

After decades of work at various scales organizations are still trying to develop a broadly-accepted set of sustainability indicators. The President's Council on Sustainable Development (1999) states, "The value of environmental performance information is under threat of being diminished by the proliferation of differing approaches… Various reporting initiatives are presently under development (and) moving in different directions both domestically and worldwide".

Nearly two decades later, the Science and Technology for Sustainability Multi-Year Plan by USEPA states as Long Term Goal 1, "establish a new set of scientifically-based sustainability indicators that are readily comprehendible at multiple scales, relevant to decision-making, and easily accessible to the public…A number of fairly simple sustainability indicators currently exist, and … they are often lacking in scientific rigor. If sustainability is to play any role in future environmental policy debates, the process of establishing benchmark values and measuring progress must be vastly improved. Metrics and indicators must be unambiguous and robust, and need to employ cost-effective data sources." The document further explains that Long Term Goal I "will test research results in real world situations. This will involve the applying indicators and metrics to problems in specific geographic regions, ecosystems and watersheds. …. It's expected that this work will result in a set of well-defined protocols, software tools and guidance for applying sustainability metrics to environmental problems" (USEPA 2007).

Local Governments for Sustainability (ICLEI) also is attempting to rectify the lack of a national framework and reduce the "vast diversity in framework structure and focus (that) makes it difficult to compare progress one locality to another, and misses the opportunity to leverage change and share lessons learned." (ICLEI uses framework broadly to include indicator initiatives as well as other sustainability programs.) (ICLEI 2008a). The organization is spearheading a partnership to " a framework for evaluating, quantifying, and improving the livability and sustainability of U.S. communities…(to meet the needs of) local governments to execute quantifiable actions toward sustainability and climate protection." According to ICLEI "Global City Indicators2 researched a variety of sustainability frameworks developed for cities. They found that cities, on average, collect more than 100 indicators, and of the eight pilot cities for the Global City Indicators Project over 1,000 indicators were being collected with only three indicators common to all cities" (ICLEI 2008b).

The Global City Indicators Project has already defined 22 "themes" such as social equity, transportation and wastewater each with a suite of indicators. The Global City Indicator website states "provides an established set of city indicators with a globally standardized methodology that allows for global comparability of city performance and knowledge sharing. This website serves all cities that become members to measure and report on a core set of indicators through this web-based relational database (www.cityindicators.org).

The existence of multiple efforts begs the question, "will we have multiple national standards?" Yet even if such agreement came to pass some entities might not participate or find of value such standardization. One comment ICEI received on the value of a national standard stated, "... a national standard encourages gamesmanship...Nation standards/indicator sets are useful…but they lack the power of evaluating a community against its own vision of where it wants to be" (ICLEI 2008a).

The US is not alone in this challenge. A 2005 report on the key achievements of sustainable development indicators (SDI) notes that "As strategic policy tools, SDIs have the potential to turn the general concept of sustainability into action. Today, however, we are far from achieving this potential." (International Institute for Sustainable Development. 2005). The report acknowledges the need for a core set of indicators, goal-oriented indicators and better coordination of related United Nations efforts: the UN Commission on Sustainable Development SDI Initiative, the Millennium Development Goal Indicators and the System of Integrated Environmental and Economic Accounts. These are just the UN affiliated programs and in addition there are efforts by non-governmental agencies and consultants. The current state of SDI is given the title of "Indicator Zoo...a growing diversity of SDI frameworks and indicator sets." It further recommends focus on "a small set of maximum three to five indicators, related to high priority policy issues" and "linking SDI where possible to policy goals and targets." A minimum of five years is needed to move to a new approach, which would include, like the USEPA effort, with a review of SDI experiences to date. Despite the passage of nearly five years since the recommendations were issues not additional information was found.

From the Bellagio Principles forward, community involvement has been stressed, as noted in ICEI's analysis (2008a), "the level of stakeholder involvement is a framework's development appears to have lasting impacts on the public perception of the framework's objectiveness". While public participation is generally agreed to be important, the Green Mountain Institute for Environmental Democracy notes that the New England effort mentioned above document more than three years of struggle **"**with questions of public involvement in indicator development. It is difficult, and often misleading, to attempt to represent a complex environmental issue with a single indicator, even for the purposes of getting feedback on the understandability of the indicator itself. Yet it may not be realistic to obtain meaningful public input on a more comprehensive measurement system. There is clearly a need for more thoughtful discussion on an appropriate and realistic role for the public" (GMIED, 1999)**.**

Another theme is highlighted in Innes and Booher's 30 year study of the development and use of indicators (1999) and in Moser and Dilling's book on facilitating behavior and social changes related to climate change. (2007) – providing information does not necessarily prompt change.

The list of benefits of indicator projects in the previous section is matched below with a more cautionary list. Items in the list might shed light on why more progress has not been made despite the proliferation of indicator and sustainability projects. The revision of the 1996 Bellagio Principle (available at www.iisd.org/measure/principles/progress/bellagio_full.asp), which provided an early guideline for SDI, states "Despite numerous assessments over the years and our increased understanding of the threats to sustainability, much remains unknown and little is quantified" (International Institute for Sustainable Development. 2009).

Here is list of shortcoming, pitfalls and challenges:

- Decisions around indicators contain hidden assumptions and simplifications that are not always made explicit or questioned.
- Both selection and evaluation of the indicators is subjective.
- Not all groups within the community are represented and therefore important knowledge and perspectives are not part of the process.
- Indicator projects are not balanced, focusing disproportionally on one of the three Es: environment, economics or equity.
- The measures are too complex to be realistically collected and interpreted at the local level especially when laypeople actively participate.
- Unconnected indicators encourage the continuation of a fragmented view of the community and its problems.
- Data is not available at the local communities' scale. The scale may be to small (farms) or too large (state or country).
- The size of an indicator set and the level of detail is too great which obscures the clarity the set was intended to create.
- Frequency of data availability is insufficient to be meaningful.
- Data collection or method of reporting change over time and therefore can no longer be easily compared.
- Indicators may show a negative trend for one community but may be positive when compared across communities or vice versus (unemployment rate during a recession as an example).
- There is a lack of skill necessary to interpret if the change is significant.
- The discipline of preparing and utilizing indicators is not maintained.
- Reports often fell into reporting of inputs (e.g. number of educational meetings held) rather than outcomes.
- Indicator projects are terminated when new officials take office or when budgets get tight.
- Changes in measurements are not adjusted for important variables such as population changes.
- Indicators are chosen that are not responsive to changing conditions.
- Indicators do not provide adequate information for decision making.
- Indicators merely raise a red flag without necessarily showing what to do differently.
- It is often unclear who has responsibility to do something about the red flag.
- Most of the local sustainability indicator initiatives in the United States do not refer to Agenda 21 or other concepts developed at the international level. (This is not true of local efforts elsewhere.)
- In the US, local sustainability indicators are not connected to anything at a larger scale such as national and international guidelines or processes.
- The preferred indicator hasn't been tracked at all or has not been tracked consistently
- Collecting the existing data from a variety of sources is time consuming and even unsuccessful if the supplying entity is unresponsive.
- Collection of primary data is expensive as well as time consuming.
- Indicators, in and of themselves, are not enough to drive change.
- Too much emphasis is placed on developing the indicators and not on taking action.

- Solving one problem can cause another one to become worse.
- The scale of the effort is too large, prompting individuals to feel that they don't have (can't have) influence at that scale.
- Some guidelines stress the importance of tracking indicators over a long time while others recommend an evolving focus on only three to five indicators at a time.
- There is general agreement that indicators need to be closely linked to actions, policy goals and targets in order to be meaningful, but frequently they are not.
- Goal statements tend to be vague and not tied to performance levels over time.
- Numbers are not reported or analyzed in a way that reveals disparities between groups such as race and ethnicity, age and gender. For example, indicators of health might be very good overall but disproportionally poor for a segment of the population.
- Indicators may be repackaged from existing environmental, social and economic initiatives and do not represent system or innovative thinking.
- The current decentralized approach to indicators makes it difficult for one entity to learn from the experience of another meaning that mistakes are repeated.
- When each entity develops a unique approach there is a high cost to developing a new program.
- Lack of common definitions and methods result in uncertainty about their validity.
- Indicators raise more questions than they answer.
- A faulty indicator can mislead people to thinking something is working when it is not (or vice versa).
- Deliberate falsification, delay or other sabotage can happen when those reporting don't like the story the indicator tells.
- Simplifying and partitioning a complex system into discreet parts can produce misleading descriptions and wrong predictions.
- A summary of the discussion so far is nicely summed up in a quote from Meadows (1998). "When indicators are poorly chosen, they can cause serious malfunction. Indicators are often poorly chosen…Despite their difficulties and uncertainties, we can't manage without indicators." (Meadows 1998).

What Does This Mean For Ithaca?

Ithaca should not wait for progress by other entities and should proceed with an indicator project at its own pace. There are clear merits in working with an established suite of indicators for which data sources have been identified. If such a suite existed, the process would be less resource intensive. However, even though there are several projects underway to create a national system, there is no assurance that anything will be established soon. ICLEI has already pushed back its completion date by one year and there have been no reports on projects since August 2009. Various consulting firms (used here to include not-for-profits) have systems for establishing indicators and identifying sources of data. Though all may be good at what they do, there is not an accepted standard across firms.

The various pitfalls and challenges should be taken seriously. Great benefit could come from having this process facilitated by an entity experienced in the full SDI process from visioning and goal setting through to data storage and reporting. Tompkins County has already gone through a similar process in the form of the Tompkins County Quality of Life Committee, which

issued a report in 2002 (unpublished). Three people where interviewed who had participated in Quality of Life Committee (intentionally not identified to preserve their anonymity). Each expressed frustration and the sentiment that nothing came of the effort. A proven process, facilitated and supported by someone with previous experience should have better results. SDI projects are resource intensive in terms of the funding and community effort required. It makes sense therefore to take advantage of the skills and experience that a consultant could bring to the process.

Ithaca is a community that would probably not do well with a cookie-cutter approach. Any process used in Ithaca should take into account the dominate culture of the community – one of engagement, activism and sometimes even contrariness. It is a community that overall wants to see itself as progressive, not racist nor prejudiced, environmentally responsible and equal to the acclaims received from outside groups such as the Utne Reader (May/June 1997), which voted Ithaca to be America's Most Enlightened City. The article byline describe Ithaca as "A gritty upstate city where the grassroots are green" (An interesting list called "Ithaca's many Top 10 listing" is available at http://youroconnorteam.com/aboutithaca.php#best).

Effort will need to be put into making sure any process is inclusive. For too long the environmental movement has been seen as dominated by people who are educated, white, and middle class or above. This has to be different with sustainability and indeed equity is part of its essence. Inclusive representation will likely not be easy to achieve but that does not mean it is not worth the effort. Past injustices and weak existing relationship will be barriers. Many in the sustainability movement have been working to heal and rectify this situation but doing so will take time. Ithaca is fortunate to have opportunities such as the Talking Circles on Race and Racism that are building bridges across traditional divides. Choices regarding the facilitator, location for meetings, and methods of selecting people and groups to involve are a few examples of the many choices that can affect if something is perceived as inclusive. Hittleman in *Counting Caring* (2007) provides a good introduction to two different frameworks that she indentified in community-based organizations in Ithaca. The Executive Summary states, "These conceptual frames have differing histories, assumptions, values and meaning making logics, and they lead us to define the essence of 'good community work' in very different ways. One, which I call the 'professional public management' frame, centralizes rational, management-based operational processes, expert-driven programming and discrete 'outcomes' as the foundation for a well-run organization. The second, the 'personal relations' frame, centralizes long-term, caring, developmentally oriented relationships as valued ends in themselves, an essential component of human and community flourishing." This is very germane since indicators are inherently value laden and they measure if a community is flourishing over time.

Any SDI project should consider additional methods of assessment. One candidate for consideration should be the Most Significant Change Technique. It collects evaluation data based on stories about the most significant changes that have taken place (Davies and Dart, 2004). It was developed to capture unexpected and hard to quantify changes in processes that are participatory and focused on social change (among other situations).

Criteria for Selecting Indicators

Researchers and practitioners have attempted to articulate the characteristics of effective indicators, sometime referred to as "acceptability criteria". Some of the shortcomings mentioned in the previous section may be mitigated by using such criteria when selecting indicators. Michalos (2007) explained that acceptability criteria are not usually specified with great precision but they provide useful guidelines for discussions and negotiations over particular indicators and indexes. Criteria can also be helpful in defending choices after the selection process. According to him, acceptable indicators or indexes should be:

1. "Relevant to the concerns of our main target audiences
2. Easy to understand
3. Reliable and valid
4. Politically unbiased
5. Easy to obtain and periodically update
6. Comparable across jurisdictions and groups
7. Objective or subjective, or both
8. Positive or negative, or both
9. A constituent or determinant of wellbeing, or both
10. Attributable to individuals or groups of animate or inanimate objects, or all of these
11. Obtained through an open, transparent and consultative review process
12. Going to contribute to a coherent and comprehensive view of a good life or human wellbeing"

OECD, 2003 stresses the importance of defining the general criteria used for selecting indicators. There is clear overlap between the criteria suggested by Michalos and OECD. OECD groups the criteria into three categories: policy relevance and utility for users, analytical soundness, and measurability.

"Policy Relevance and Utility for Users
An environmental indicator should:

- provide a representative picture of environmental conditions, pressures on the environment or society's responses;
- be simple, easy to interpret and able to show trends over time;
- be responsive to changes in the environment and related human activities;
- provide a basis for international comparisons;
- be either national in scope or applicable to regional environmental issues of national significance;
- have a threshold or reference value against which to compare it, so that users can assess the significance of the values associated with it.

Analytical Soundness
An environmental indicator should:

- be theoretically well founded in technical and scientific terms;
- be based on international standards and international consensus about its validity;
- lend itself to being linked to economic models, forecasting and information systems.

Measurability
The data required to support the indicator should be:

- readily available or made available at a reasonable cost/benefit ratio;
- adequately documented and of known quality;
- updated at regular intervals in accordance with reliable procedures."

Some communities use additional criteria. Farrell and Hart (1998) described the criteria to identify suitable indicators used by Fife, Scotland and Sustainable Seattle. Fife, Scotland sought indicators that helped evaluate the effect of "the activities in question on future generations; the full environmental cost of those activities; and the fairness of the resulting distribution of resources and services". For Seattle, each indicator had to "reflect something basic and fundamental to the long-term cultural, economic, environmental, or social health of a community over generations." It also had to be accepted by the community; attractive to local media; statistically measurable; logically or scientifically defensible and able to highlight the linkages between different parts of the community. According to the Telfer School of Management (2009), indicators should take into consideration both the supply and the demand side of each element. For example, in the case of solid waste, "the demand side refers to its generation in households and businesses leading to a demand for its removal. The supply side refers to the available means for its disposal – the supply of removal capabilities... These two sets of concerns, and the politics of dealing with them, are very different"

Here are additional criteria gleaned from the readings;

- Measure results not inputs
- Minimize original data collection
- Maximize ease for local people and groups to get the information and process it
- Maximize "fit" between what local people value and the measures used
- Show change and illustrate trends through easily understood measurements such as a change of percentage, a ratio, or change in relation to a target
- Are clear about which direction of change is good and which is bad
- Provides information in time to act

Criteria should promote thoughtful discussion and indicators that do not meeting all the criteria should be thrown out. As Meadow (1998) so succinctly states "It's easy enough to list the characteristics of ideal indicators. It's not so easy to find indicators that actually meet these ideal characteristics."

The Sustainable Measures website (www.sustainablemeasures.com) has a searchable database of indicators. Each indicator has a ranking based on a checklist that is intended to be "helpful for applying the sustainability criteria to indicators." Indicators earn a point for each of 13 questions that can be answered in the affirmative. While 13 points are possible, 8 points is a high score. A "yes" to the final, 14th, question is considered grounds for rejecting the indicator. It states "Does the indicator measure sustainability that is at the expense of another community or at the expense of global sustainability?" Other SDI projects may select addition criteria as being essential.

A list of data sources is included on the Sustainable Measures website (www.sustainablemeasures.com/Indicators/SourceList.html) as is a short list of "examples of good indicators", that are highly ranked using the 13 questions:

- "Percent of front-line employees who attended employer-sponsored training
- Average age of commercial fish harvesters
- Ecological footprint
- Ratio of the number of hotel jobs to number of visitors
- Pedestrian friendly streets
- Total waste generated"

The average age of commercial fish harvesters and the ratio of the number of jobs to visitors, are good examples of indicators that is relevant to a particular place. The first was used in Maine and the second in Hawaii. The average age of farmers would be more relevant to the greater Ithaca area.

The ecological footprint and its rate of change is at the top of Meadows (1998) list of ten indicators. The ecological footprint refers to the amount of space on the earth an individual or nation requires to supply all the food, goods, energy and waste disposal.

What Does This Mean For Ithaca?

Research and experience point to the benefit of making explicit the criteria used to select indicators. The variety of criteria used indicates that having criteria that have been thought about is more important than exactly what criteria are used. In addition to the wisdom of following the advise of those who have gone before, concerns mentioned in the prior section about inclusivity and different frames points to this being specifically important for Ithaca to heed.

In addition, Ithaca should take advantage of the effort that has gone into the selection of indicators for other communities. In the next section on process it is explained that in some communities a group of professionals and technical experts formulated a large set of indicators for use in the participatory process. Given how easy it is to review the indicators used in other communities, the core working group should assemble a good size initial set for discussion.

Following the suggestion to minimize collection of primary data reduces issues of data storage. As noted in the final section, an SDI project should take advantage of the analysis already being conducted by Tompkins County Planning Department, the Village at Ithaca and others.

Process

In 1996, the International Institute for Sustainable Development (IISD) hosted a conference in Bellagio, Italy for an international group of researchers and practitioners. The resulting Bellagio Principles, as they became known, were a guide, an assessment process using indicators. The process spanned the whole process from the choice of indicators to their interpretation to sharing the results. A vision of sustainability and attendant goals for the particular place and people involved form the starting point. Indicators should take a holistic approach, reflecting the way economic, environmental, and social aspects of development interact as pieces of the whole. They should consider both inter- and intragenerational equity, and they should consider the ecological conditions that life depends on. The scope – temporally ad geographically – should

be sufficient to address distant effects while still having practical application. The process should be open, inclusive and communication should use clear, plain language. Assessments should be ongoing, iterative and adaptive to change. According to Farrell and Hart (1998), the Bellagio Principles were used to guide the majority of the sustainability indicator projects undertaken until the time of their publication, something that appears to continue to be true. In 2009 the Principles were replaced with an updated version now called BellagioSTAMP: Sustainability Assessment and Measurement Principles.

Consulting services and guidebooks are readily available. Some consultants learned on the ground with community SDI projects and then went on to offer consultations to others. Alan AtKission who was prominent in the early work of Sustainable Seattle and the Jacksonville Community Council are examples of this. Sustainable Measures has an online training course based on training provided to all USEPA regions. The Connecticut-based firm will conduct the training in person and consult on SDI projects. Crossroads Resource Center also provides consulting services and a guide for undertaking indicator projects.

Redefining Progress, which describes itself as a public policy and sustainability think tank (www.rprogress.org), published *The Community Indicators Handbook*. Meadows (1998) summarizes the 10 steps process.

1. "Select a small working group responsible for the success of the entire venture
2. Clarify the purpose of the indicator set
3. Identify the community shared values and vision
4. Review existing models, indicators and data
5. Draft a set of proposed indicators
6. Convene a participatory selection process
7. Perform a technical review
8. Publish and promote the indicators
9. Update the report regularly"

ACT Rochester describes their process "We used a two-step process to select the indicators. First we convened 12 community meetings to identify indicators in each topic area. More than 100 people contributed their thoughts and produced a list that exceeded 280 indicators. Then we asked the Center for Governmental Research (CGR) to pare down the list based on its knowledge of available data sources. In the end, we chose 113 indicators that had many years of data at a county level, a consistent definition over time and a source whose data collection process we thought was reliable." (www.actrochester.org). An alternative model (Innes and Booher 1999) based on research of successful and unsuccessful SDI efforts, recommends that an initial set of indicators be formulated by a group of professionals and technical experts. The broader community then has input on the list.

Other suggestions include:

- Allow adequate time and resources since the process is important both terms of the multiple benefits that can be gained from a good process and because a good process is more likely to give better long term results.

- Provide education for those who need to act on the data / information such as agencies, home builders, utilities, transportation providers and home owners.
- It takes significant time and effort to gather and tabulate data, as illustrated in the Sustainable Seattle case study. This is true both for the step 4 in the Redefining Progress and for the long-term periodic reporting.
- It may be beneficial to have entities that are already collecting or reporting on data to reorganize reporting systems so that original and new indicator project needs can be met most efficiently.

How long will the process take? Vancouver used a 2 year process (Cities PLUS). Ottawa has estimated their effort will take 3 years. While these are fairly typical some initiative take longer and a few a shorter length of time. The Minneapolis Sustainability Initiative began in 1992 and it was not until 2004 that they released a sustainability plan (Crossroads Resource Center 2004). PlaNYC is noted as one of the fastest processes, weighing in at more than a year. The time given references only the initial development phase and it should be recognized that the selection of indicators is iterative, with changes and fine tuning taking place as the plan is implemented. Some communities, as seen in the Sustainable Seattle case study, go through more radical changes.

ICLEI (2008a) attempted to quantify the cost of developing SDI. Some communities reported zero cost since the work was done by existing staff within their current job. When a dollar figure was given it ranged from $40,000 to $300,000. The wide range was justified by the vast difference in community populations; ICLEI did not normalize.

What Does This Mean For Ithaca?

Any process should take into account that much has changed since the first communities pioneered indicator projects. In addition to the lessons learned, covered above, the scientific community has overwhelmingly recognized the threat of human induced climate change. Further more, as recently as this year, the magnitude of global changes is being realized. Indeed conditions such as the melting of polar ice are more rapid and severe than even the worst predictions. Nationally, energy concerns have risen to third on a list of top twenty concerns. These changes may make sustainability seem more important than ever and could make it easier for Ithacans to arrive at a common goal

As noted previously my recommendation is that a consultant be hired to assist with an Ithaca-based SDI project. It would make the most sense to first bring together a small group to discuss what success would look like, develop a draft scope of work and develop criteria for selecting a consultant. The core group would work closely with the chosen consultant to develop a process likely to be successful in Ithaca. Given that the a SDI initiative could take two to three years, it will take time to build the group of people willing to fill *The Community Indicators Handbook* suggestion of being “responsible for the success of the entire venture”. While that is a significant commitment, Ithaca is fortunate to have a strong group of community members that are passionate about sustainability.

Some consultants include data storage among their services. Even if this is not the case, experience with handling, storing and analyzing data should be among the expertise sought in a consultant.

Additional Reflections and Recommendations

Innes and Booher (1999) conducted an extensive review of SDI projects in order to help future efforts be more successful. Their framework describing three types of indicators is very helpful and serves as a model likely to be useful in the Ithaca area.

1. **System performance indicators** provide feedback about the overall health of a community/region. Three to five highly visible, consensually agreed indicators are enough to reflect key issues and help guide movement toward sustainability. System indicators assess more than one thing. For example, total waste generated relates to resource consumption, built/financial capital and public attitudes about sustainability. Income gap or livable wage statistics are an indicator of equity, poverty and economic vitality. Each system indicators must have possible action steps and policy responses and must be amenable to change. System performance indicators are the most appropriate place for broad public participant, with input also from professionals and technical experts.
2. **Policy and program measures** provide policy makers feedback about the operation of specific programs and policies. These are, or already have been, selected by those who will learn from and use them, people knowledgeable about the subsystem. They are not measures of performance and they should not be used to reward or punish workers. They are used as clues to look more deeply at an issue, to raise flag on an emerging issue and to inspire progress. For example, the County Solid Waste Division is in the best position to articulate and monitor indicators and take action relative to waste disposal supply. This type of indicator is not appropriate for broad public input, though an advisory committee may be involved. When indicators are selected by outsiders it almost guarantees they will not be used.
3. **Rapid feedback indicators** assist individuals and businesses to make more sustainable decisions on a day-to-day basis and make the best use of limited resources. For example: at a US college a set of three lights in each dorm room provided feedback on the energy use of that room relative to other rooms. This simple immediate feedback caused students to dramatically reduce the amount of energy used on campus. Elsewhere simply moving an energy meter to where it was readily visible resulted in decreases in energy use, as do Smart Meters. These sorts of indicators do not need a lot of public discussion to establish, though outreach and education may be helpful for their implementation.

What Does This Mean For Ithaca

System performance indicators would be the focus of broad participation.

Policy and program measures are already underway by county and not-for-profit groups. For example, the County Planning Department already gathered significant public input into the Comprehensive Plan. Progress on actions suggested in the plan is important but of interest to certain groups rather than of general interest. For example, item 12 from the energy element "Determine the feasibility of developing a regional consortium of sustainable biomass growers and processors to supply biomass consumers in the region" is an important step in reaching

energy goals but relevant only to a few. The Planning Department has selected indicators of progress towards those larger goals, for all but the new energy element. "Indicators of Success" reports were published consecutively 2005 through 2008 (the Comprehensive Plan and Reports are available at www.tompkins-co.org/planning). More could be done to share back with the public the progress, or lack thereof, being made on the various goals. Though "Indicators of Success", reports are publically available they are virtually unknown.

There are more existing efforts that fit under the category of policy and program measures. Below are more examples and more should be collected as part of a SDI effort:

- Tompkins County Solid Waste Division set a new goal, of diverting from the landfill 75 percent of all waste generated, such as by recycling or composting.
- Village at Ithaca formed to "advocate for excellence and equity in Ithaca's public schools….to ensure that students, particularly Black, Latino and low-come students consistently meet or exceed local and New York State standards of achievement (http://www.villageatithaca.org). Village at Ithaca has produced two Annual Equity Report Cards together covering 2005-2007.
- Tompkins Community Action and its partners, Cooperative Extension of Tompkins County included, have worked to expand actual work and also support for increasing energy efficiency in homes.
- The Finger Lakes Land Trust has a vision of an Emerald Necklace of protected open space ringing Ithaca.

The core group on this project should create a more comprehensive list of ongoing efforts use them to build a richer picture of Ithaca's progress towards sustainability.

Returning to types delineated by Inner and Booher, the core group should also research rapid feedback indicators relationship to the system performance indicators and possibly some of the policy and program measures.

Resources

(Resources are listed here to provide a glimpse at the type, and breadth, of materials used and to give a reader enough information to hunting down the resource. The formatting and completeness of information does not meet the standards for formal or academic references or citations.)

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U.S. Environmental Protection Agency Office of Research and Development (2007) *Science and Technology for Sustainability Multi-Year Plan* (FY2008–FY2012).

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World Commission on Environment and Development (1987). *Our Common Future*. Available at http://www.un-documents.net/wced-ocf.htm.

Timeline of Events

I created this informal time for my reference as I worked. It is included in case it similarly helps the reader.

YEAR	DOCUMENT	ORGANIZATION or EVENT
1987	Our Common Future (Brundtland Report)	World Commission on Environment and Development
1988		Intergovernmental Panel on Climate Change (IPCC) is established to assess the most up-to-date science on global climate change
1989		Canada begins an environmental indicators program-considered by some to be the first
1990		Sustainable Seattle Forum held
1991	Caring for the Earth	International Union for Conservation of Nature and Natural Resource, the United Nations Environment Programme and the World Wide Fund for Nature
1992	Agenda 21	Earth Summit. UN Conference on Environment and Development
1992	First academic publication on The Ecological Footprint	First academic publication on The Ecological Footprint was published by William Rees in 1992 followed by the book, *Our Ecological Footprint,* in 1996 co-authored by Mathis Wackernagel.
1995	Genuine Progress Indicator	Redefining Progress publishes GPI as an alternative measure to GDP that includes socially equitable and environmentally sustainability.
1996	Bellagio principles	Meeting at the Rockefeller Foundation's Study and Conference Center in Bellagio, Italy to review progress to date on Agenda 21.
1996 & 1999	Towards Asustainable America: Advancing Prosperity, Opportunity, And a Healthy Environment for the 21st Century	President's Council on Sustainable Development (Clinton)
1994 work begins 1997 draft published	Sustainable Development Inventory	The Interagency Working Group on Sustainable Development Indicators reports to the Council on Environmental Quality in the Executive Branch of the Federal government
1997	Kyoto Protocol signed	United Nations Framework Convention on Climate Change.
2000	UN Millennium Declaration	Millennium Summit
2002	Millennium Development Goal Indicators	Inter-agency and Expert Group (IAEG) on MDG Indicators, coordinated by the United Nations Statistics Division

1999	Global Reporting Initiative, first draft	convened by Coalition for Environmentally Responsible Economies
2003	*Handbook of National Accounting: Integrated Environmental and Economic Accounting 2003* (also referred to as System Of Integrated Environmental And Economic Accounts and SEEA 2003)	United Nations Statistics Division
2005		Kyoto Protocol enters into force
2006	Sustainability Reporting Guidelines, known as G3 (include other sectors including not-for-profits)	Global Reporting Initiative (officially launched as a permanent institution in April of 2002)
2007	IPCC Fourth Assessment Report: Climate Change 2007	Intergovernmental Panel on Climate Change
2007	Indicators of Sustainable Development: Guidelines and Methodologies Third Edition	UN Commission on Sustainable Development (CSD) Division for Sustainable Development (DSD)
2009	BellagioSTAMP (replaced the original Bellagio Principles)	3rd OECD World Forum, Charting Progress, Building Visions, Improving Life organized by International Institute for Sustainable Development and Organisation for Economic Co-operation and Development

Bellagio SUSTAINABILITY ASSESSMENT AND MEASUREMENT PRINCIPLES

(Excerpted from a brochure of the same name)

1 Guiding Vision

Assessing progress towards sustainable development is guided by the goal to deliver well-being within the capacity of the biosphere to sustain it for future generations.

2 Essential Considerations

Sustainability Assessments consider:

- The underlying social, economic and environmental system as a whole and the interactions among its components
- The adequacy of governance mechanisms
- Dynamics of current trends and drivers of change and their interactions
- Risks, uncertainties, and activities that can have an impact across boundaries
- Implications for decision making, including trade-offs and synergies

3 Adequate Scope

Sustainability Assessments adopt:

- Appropriate time horizon to capture both short & long-term effects of current policy decisions & human activities
- Appropriate geographical scope ranging from local to global

4 Framework and Indicators

Sustainability Assessments are based on:

- A conceptual framework that identifies the domains that core indicators have to cover
- The most recent and reliable data, projections and models to infer trends and build scenarios
- Standardized measurement methods, wherever possible, in the interest of comparability
- Comparison of indicator values with targets and benchmarks, where possible

5 Transparency

The assessment of progress towards sustainable development:

- Ensures the data, indicators and results of the assessment are accessible to the public
- Explains the choices, assumptions and uncertainties determining the results of the assessment
- Discloses data sources and methods
- Discloses all sources of funding and potential conflicts of interest

6 Effective Communication

In the interest of effective communication, to attract the broadest possible audience and to minimize the risk of misuse, Sustainability Assessments:

- Use clear and plain language
- Present information in a fair and objective way, that helps to build trust
- Use innovative visual tools and graphics to aid interpretation and tell a story
- Make data available in as much detail as reliable and practical

7 Broad Participation

To strengthen their legitimacy and relevance, sustainability assessments should:

- Find appropriate ways to reflect the views of the public, while providing active leadership
- Engage early on with users of the assessment so that it best fits their needs

8 Continuity and Capacity

Assessments of progress towards sustainable development require:

- Repeated measurement
- Responsiveness to change
- Investment to develop and maintain adequate capacity

- Continuous learning and improvement

Millennium Development Goals Indicators

The Millennium Development Goals were agreed to by 189 nations at the Millennium Summit held at the UN in New York City in 2000. Indicators were selected for each goal and progress on selected indicators is reported on annually by the Secretary-General

Goal 1: Eradicate extreme poverty and hunger
Goal 2: Achieve universal primary education
Goal 3: Promote gender equality and empower women
Goal 4: Reduce child mortality
Goal 5: Improve maternal health
Goal 6: Combat HIV/AIDS, malaria, and other diseases
Goal 7: Ensure environmental sustainability
Goal 8: Develop a global partnership for development

The targets and indicators for Goal 7 are listed as an example.

Goal 7: Ensure environmental sustainability

- Target 7A: Integrate the principles of sustainable development into country policies and programmes; reverse loss of environmental resources
- Target 7B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss. Indicators:
    - Proportion of land area covered by forest
    - CO_2 emissions, total, per capita and per $1 GDP (PPP)
    - Consumption of ozone-depleting substances
    - Proportion of fish stocks within safe biological limits
    - Proportion of total water resources used
    - Proportion of terrestrial and marine areas protected
    - Proportion of species threatened with extinction
- Target 7C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation (for more information see the entry on water supply). Indicators:
    - Proportion of population with sustainable access to an improved water source, urban and rural
    - Proportion of urban population with access to improved sanitation
- Target 7D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum-dwellers. Indicators
    - Proportion of urban population living in slums

From http://mdgs.un.org/unsd/mdg/Host.aspx?Content=Indicators/OfficialList.htm