Sustainability Indicators

Just like a roadmap, we need something to tell us if we're there….or getting close….or at least on the correct road. Hence sustainability indicators are used to evaluate over time how much progress is being made towards achieving particular facets of sustainability. There is a vast literature on sustainability indicators. They have been developed to track specific economic, social and environmental aspects; not surprisingly the specific indicators utilized often reflect the purposes and interests of particular organizations. For examples, corporations are often interested in tracking how the "intensity factors" of their operations, such as energy consumption per unit output changes over time, or how specific cost inputs per unit of output changes over time. A conservation organization might be interested in tracking the changes in the loss of tropical forest acreage over time, or changes in population numbers of specific endangered species. An environmental agency might be interested in the numbers of people exposed to unhealthy air or the number of water quality standards violations found in the monitoring network.

As useful as some of these specific examples may be, it is also desirable to have more general indication of progress towards sustainability for nations and societies. To assist national governments, in 2016 the UN Statistical Commission adopted a global indicator framework consisting of 230 indicators to track progress towards 17 goals for the 2030 Agenda for Sustainable Development. (The extent to which countries utilize such indicators and devote resources to developing them varies greatly). While not specifically labeled as *sustainability* indicators, The World Bank publishes 331 development indicators covering 214 countries. Many of these indicators - related to economics and poverty; environment and climate; and social, health and gender well-being – can be used to track progress towards sustainability.

Environment Canada publishes a comprehensive set of Canadian Environmental Sustainability Indicators (CESI) which includes air quality (11 indicators of air quality, emissions, greenhouse gases and public health), water (21 indicators covering water quality and quantity) and nature (16 indicators covering habitat protection, wildlife and biological resources).

Among U.S. federal agencies, the U.S. Forest Service measures 18 sustainability indicators covering biological diversity, forest health, environmental quality, carbon and biomass stocks and socioeconomic benefits from forests. Although the U.S. EPA publishes extensive data bases, it does not publish any sustainability indicators. Ironically, however, the U.S. EPA Green Communities Program has published a set of guidelines for communities to develop their own environmental, economic and social sustainability indicators.

Among government bodies in the U.S, a number of city and county governments and regional authorities have adopted sustainability indicators to measure the quality of life in their communities. A well-known organization, Sustainable Seattle, used a detailed, co-operative and iterative process which included the general public, civic leaders and technical advisors; 40 regional indicators of sustainability were developed in response to economic, environmental and social concerns. The City of Minneapolis adopted 26 sustainability indicators. Likewise many government bodies in California are using sustainability indicators for specialized and general public uses.