Actionable Science for Communities

Indicators, Indices and the Report on the Environment – SHC 2.64

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Problem Summary & Decision Context

Decision makers need the appropriate indicators and indices to assess, track, and equitably weigh integrated human health, socio-economic, environmental, and ecological factors to foster sustainability in the built and natural environments.

- Identify information gaps
- Develop measures of resilience for natural and built environments, frameworks and management strategies
- Holistically integrate measures of ecosystem condition, human health and well-being
- Enhance ROE with a trend interpretation component

Utility to Agency

- Assist EPA and its partners in making decisions about environmental policy, education, and monitoring using indicators of sustainability;
- Define the role of national level indicators in informing community-level indicator development and community-level decisions;
- Demonstrate the utility of environmental indicators in decision support tools that evaluate the sustainability of short and long-term community decisions in the context of protecting the environment and public health.

Future Directions

Communicate to EPA program offices and regions, researchers and community stakeholders, the current state of practice for environmental indicators in sustainability research and identify research needed to fill information gaps

- Integrated compendium of indicators and indices (FY12 to FY15; FY16-19)
- Synthesis report of completed grants under EPA's Science To Achieve Results (STAR) Environmental Public Health Indicators Research

➢ Potentially impacts all EPA Program Offices and Regions

Advance the field of resilience science by exploring the interdependence of human and natural systems to inform approaches for community sustainability planning and understanding potential trade-offs

- Qualitative aspects of resilience to include governance, law and adaptive management
- Climate Resilience Index and resilience indicators to assess spatial and temporal patterns in human and natural systems
- Linkages between sustainability and resilience critical for management in the face of global change

➢ Potentially impacts Office of Water; Office of Air and Radiation; Office of Solid Waste and Emergency Response; potentially all Regions

Utilize holistic approaches for assessing human health and well-being in the interpretation of changes in environmental conditions

- Analyses of health outcome data in relation to environmental quality
- Modified models linking services flows to well-being
- Approaches to develop direct measures of human well-being that relate to the natural environment

➢ Potentially impacts Office of Children's Health Protection; Office of Water; Office of Air and Radiation; Office of Solid Waste and Emergency Response; Office of Chemical Safety and Pollution Prevention; potentially all Regions

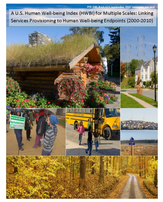
Evolve the ROE program in both form and substance to meet changing programmatic needs, to respond to new scientific information and to incorporate new indicators researched and developed by SHC and other ORD staff in collaboration with EPA program offices.

- Develop and maintain a scientifically refreshed and up to date ROE website;
- New indicators developed in conjunction with EPA program/regional offices;
- A component piece to the ROE that analyzes and interprets the reported trends

➢ Potentially impacts all EPA Program Offices and Regions

Accomplishments

- Web-enabled database of sustainability indicators and indices (DOSII) offers a single source of searchable information describing literature-supported sustainability measures.



- The synthesis report, *U.S. Human Well-being Index (HWBI) for Multiple Scales: Linking Services Provisioning to Human Well-being Endpoints (2000-2010)*, describes the development and demonstration of the HWBI approach at multiple scales and for different population groups.
- Publically released Draft Report on the Environment (ROE)

- *Creating an Overall Environmental Quality Index, Technical Report* and *Environmental Quality Index, Overview Report* describe data used to create the EQI, EQI output for years 2000-2005, and supporting documentation of the data (publically released).

- A total of $10M awarded through EPA STAR Grants towards the development of environmental health outcome indicators.

EPA Science To Achieve Results
Environmental Public Health Indicators Research

Partner Engagement Opportunities

- Program and Regional input to identify information gaps;
- Technical input from Program and Regional partners to develop, refine and incorporate indicators into decision support tools;
- Dissemination of indicators and tools to ensure they are used within EPA's programs and regions as well as the communities they support.