

## Indicators of Environment and Sustainable Development

### Indicators – a tool for monitoring and reporting

SEI in Stockholm participates in a number of initiatives aimed at reporting on environmental and sustainable development. Indicators are frequently used as tools in this context, both as a basis for *analysing* progress and performance, and as a way of *communicating* this progress. Indicators can be defined as parameters, or values, which build on data. They are commonly the first, most basic tool to analyse changes, as well as to illustrate and communicate trends in the environment.

Data, indicators, headline indicators and indices are common terms in monitoring and reporting. The relationship between these tools, as well as their different contexts, can be depicted in a so-called information pyramid (see figure). *Data* is the most basic component of indicator work. Most data cannot be used to effectively interpret change in the state of the environment, the economy or the social aspects of society. *Indicators* can be superior to data in several ways: they provide decision-makers and other target groups with enough knowledge to formulate initial responses and decisions and are more easily interpreted than complex data, which can simplify communication. If two or more indicators are aggregated, an *index* is created. Finally, indicators or indices can be meant to function as a headline, a messenger. These types of few, well-selected, easily understandable and communicative indicators are commonly called *headline indicators*.

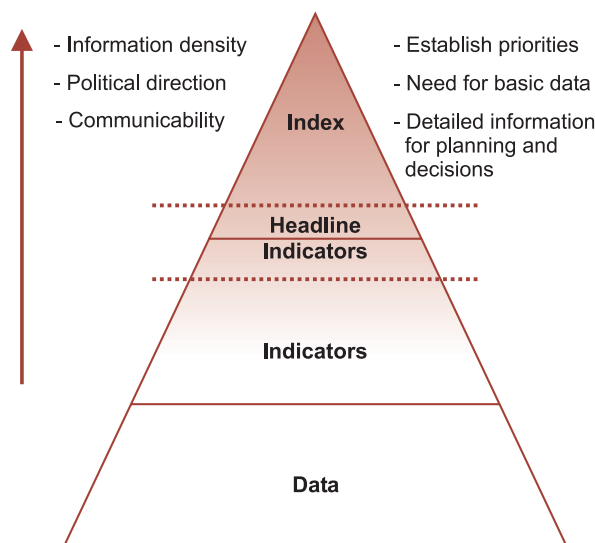
### Accounting for the who, the why and the how

In order to make monitoring and reporting effective, appreciated, and useful, SEI focuses on two central aspects – purpose and target groups. Regardless of the tool one uses, it is important to remember that an indicator (or index) has been selected for the purpose of indicating something and not to provide the complete picture – indicators will hardly ever tell the whole truth without being paired up with further analysis.

Indicators can be used for many different purposes. SEI focuses on three purposes:

- *To follow up performance* in relation to pre-defined targets. The indicators are here used as a technical tool for monitoring.

- *To inform about various trends in society.* The indicators are then presented for example in an annual (indicator) report, as a graph in the newspaper, or reported in the news.
- *To try to affect certain behaviour* by communicating an indicator that provides a clear message about a phenomenon that people react to.



These three purposes are not mutually exclusive, but many indicator initiatives have one of the three as their main focus. This determines the need for resources as well as the design and presentation of the indicators.

It is essential to know whom to communicate with and for what purpose. Is it experts, the public, school children, the private sector, media or a more specific target group such as middle-aged women who own a car and live in a large city region? Why should they be interested in the trend that the indicator illustrates, that is, what

is their motivation – economic benefit, improved health, newsworthiness?

Two different trends have become increasingly obvious in monitoring environmental and sustainable development:

1. An increased understanding of the *complexity* of the ecosystems and the processes surrounding sustainable development has led to a trend of increased demand for data.
2. At the same time the need for *simplification* of the information has increased – without easily understandable information it is difficult to get decision-makers, the public or others to act for a sustainable development.

These two trends are often incompatible, and in reality a compromise should not always be found. Instead, different target groups, with partly different needs, should be provided with the specific type of information they require to enable them to continue working towards a sustainable development.

Hence, if the different target groups' needs are to be fulfilled, the right *choice of reporting tool* should be made. Larger sets of indicators, indices, headline indicators, presentational tools, and data all work as different reporting and monitoring tools.

## Working with the Swedish environmental quality objectives

SEI is currently involved in several activities related to monitoring and reporting of the Swedish environmental quality objectives. Since 2002 SEI has an institutional agreement for cooperation with the Swedish Environmental Protection Agency (EPA), focusing on strategic development of indicators for the Swedish environmental quality objectives. Before the institutional agreement, SEI had already been involved in several activities and projects concerning the environmental quality objectives. Initially, an *examination of the possibility of using aggregate indices* in the monitoring of the objectives was made. SEI found that other ways of reducing the scope of the information may be more effective and purposeful, such as using headline indicators or presentational tools. This analysis led to the development of two parallel tracks in the continued indicator work. First, SEI participated as *expert advisors* when the EPA identified performance indicators for the objectives and sub-targets they are in charge of and documented these indicators in fact sheets. This set of technical indicators is primarily used for internal monitoring and as a comprehensive source for more targeted information. Second, SEI developed a *vision* for what monitoring and reporting of the objectives should achieve by 2010, based on a discussion of different target groups' roles and needs and a review of existing monitoring and reporting initiatives. The aim was to provide strategic, long-term recommendations on how indicators can be used in the outreach work linked to the objectives. Focusing on the communicative rather than the technical aspects of indicators, SEI then conducted an extensive *target group analysis* based on focus group interviews with school teachers, environmental NGOs, media, and the private sector, in order to make the indicator development demand driven.

## Other selected activities and projects

Apart from the work with the Swedish environmental quality objectives, SEI is involved in several other activities, which relate directly or indirectly to indicators.

- SEI has helped the Swedish Ministry of Environment to analyse whether the sustainable development indicator set presented by the Swedish EPA and Statistics Sweden in 2001 is relevant and useful for follow-up of the *national strategy for sustainable development* adopted in 2002, or whether other indicator sets would be more appropriate.
- A manual has been prepared for the Swedish International Development Cooperation Agency (Sida) on how to actively use environmental indicators in the *performance of Environmental Impact Assessments (EIAs)* and in continued monitoring of development projects. The proposed indicators are also included in Sida's general EIA guidelines.
- An example of indicator work as a component of larger projects is SEI's contribution to the development of the new up-stream approach to *Country Environmental*

*Analysis (CEA)* within the World Bank. The CEA is a diagnostic tool for country programming within the World Bank and indicators are one of the main analytical tools to be used in performing a CEA, covering environment-development linkages, policy aspects, and institutional capacity for environmental management.

- In a project on *upstream-downstream co-operation on water-related environmental problems in the Beijing-Hebei Eco-Region*, an indicator system is planned to be constructed to reflect the situation and changes in the water supply, water quality, economic performance, and environmental sustainability in the region.
- Indicators are used throughout SEI's extensive work on *vulnerability analysis* where both generic vulnerability indicators and indicators that are more project specific are identified.

## Selected SEI publications

- Barrett, J. and C. Simmons. 2003. *An ecological footprint of the UK*. Stockholm Environment Institute: Stockholm.
- Bergqvist, A., Å. Persson and L. Segnestam. 2002. *Indicators for sustainable development. Analysis and suggestions for further work* (in Swedish). Ministry of Environment: Stockholm. Unpublished.
- Bohn, M. 2002. Background study for target group analyses (in Swedish). Swedish EPA: Stockholm. Unpublished.
- Jackson, T. and S. Stymne. 1996. *Sustainable Economic Welfare in Sweden - A Pilot Index 1950-1992*. Stockholm Environment Institute: Stockholm.
- Nilsson, M. 1997. *Approaches to an Earth Audit*. SEI/Earth Council/UNEP: Nairobi.
- Persson, Å. and L. Segnestam. 2002. *Vision for the reporting of the Swedish environmental quality objectives* (in Swedish). Swedish EPA: Stockholm. Unpublished.
- Segnestam, L. 2003. *Indicators of Environment and Sustainable Development: Theories and Practical Experiences*. Environment Department Environmental Economics Series Paper No. 89. World Bank: Washington DC.
- Segnestam, L. and Å. Persson. 2002. *Indices, indicators, presentational tools and the Swedish environmental objectives* (in Swedish). EPA Report 5206. Swedish EPA: Stockholm.
- Segnestam, L. and Å. Persson with contributions by A. Jennervik, G. Lövblad and M. Åhman. 2002. *Guidelines for Environmental Monitoring in International Development Cooperation. Including examples for sectors covered by the Sida EIA guidelines*. Sida: Stockholm.
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