CSIN Learning Event
June 23, 2005

"Visual presentation of indicators: a view of the horizon"
Andrea Scheller, Swiss Statistical Office

Indicator practitioners are often challenged with presenting indicator data in a format that is accessible and appropriate for the desired audience. It is important that indicators are communicated clearly with little room for misinterpretation. The relevance of the indicators to societal issues and policy should also be shown, along with the scientific credibility of the information. Visual portrayal of indicators, mainly with graphs and maps, is a commonly agreed upon approach to presenting indicators, given that a large amount of complex information can be communicated in a short period of time. Over the past 15 years, indicator practitioners have been experimenting with a number of different approaches for displaying indicators. Some approaches seem to have worked better than others. This CSIN learning event included a presentation from a representative of the Swiss Statistical Office on a conference that was held in Switzerland on the techniques for visualizing indicators.

The conference purpose was for indicator practitioners to exchange experiences and expertise and to build capacity in the following interrelated areas:

- selection of key indicators
- demonstration of aggregation (visual and digital)
- comprehensible displays of trends and assessments
- audience-compatible presentation

Participants in the conference included researchers, statisticians, visual information, design specialists, and controllers.

Presentation of indices

When presenting indices, there potentially a lot of complex information that could be shown. The performance of the index, titles of indicator sub-groups, and the relevance of the index all need to be communicated in an engaging way.

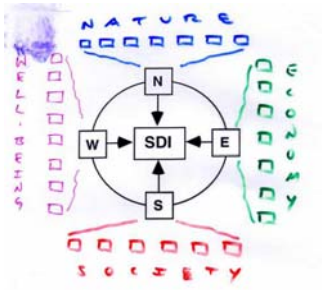

Figure 1: Compass

Figure 1 uses a common metaphor, the compass, as a way to describe the four groups of indicators that make up the index, nature, economy, society and well-being. This diagram provides the conceptual framework, but does not yet show the performance of the indicators.

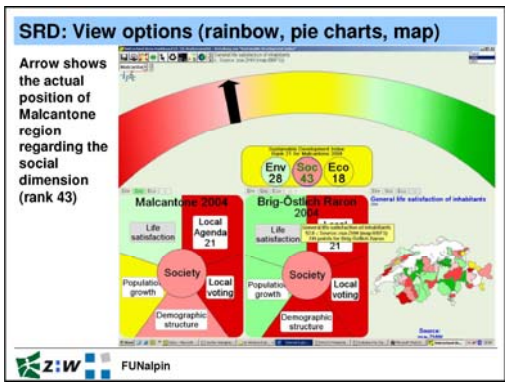

Figure 2: Dashboard

The dashboard approach, shown in Figure 2, also uses the commonly known metaphor of a vehicle dashboard to help create display the relative performance of the index. The dashboard highlights various "controls" or specific indicators that make up the index in a way that enables comparison. Multiple options for analysis of disaggregated indicators within the dashboard, such as pie charts and regression scatterplots are also available.

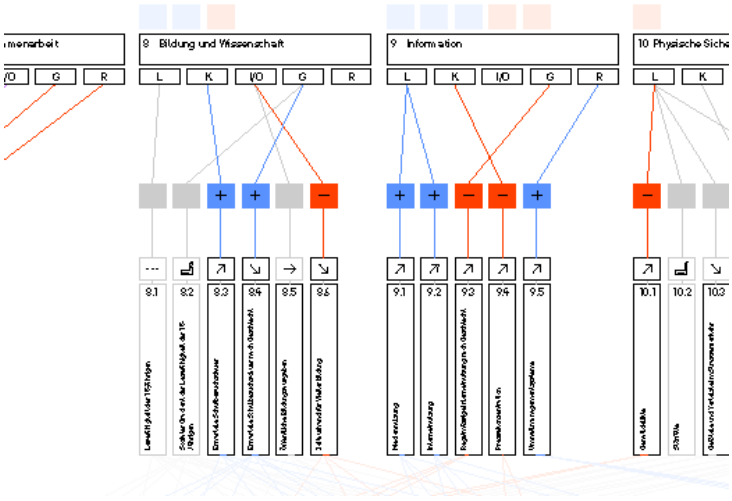

Figure 3: Multi-layered

Another approach, shown in Figure 3, uses codes to illustrate complex information in an abbreviated way. Performance of indicators is shown using +/- and color, as well as arrows that indicate whether the change in indicator value is to be interpreted as an improvement. Meeting participants found this approach to be less user-friendly because one needs a lexicon to understand various symbols and abbreviations.

Similar to the presentation of indices, presenting indicators can be done in interesting ways, such as with the use of metaphors. The following highlights a few of the unique ways indicators can be presented.

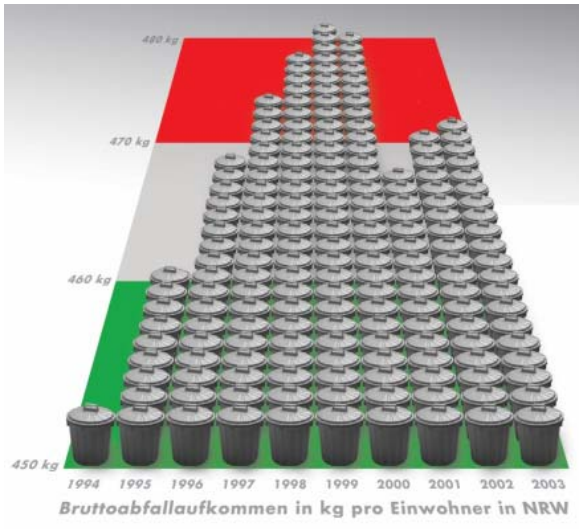

Figure 4: Trash cans

In Figure 4, trends in waste is illustrated using garbage cans, a catchy approach to reach a broader public audience. The diagram also shows targets using colors. Information in the diagram can be immediately apprehended - one can fairly easily see that in 2003, waste levels were slightly increasing but not yet reaching upper levels denoting stress.

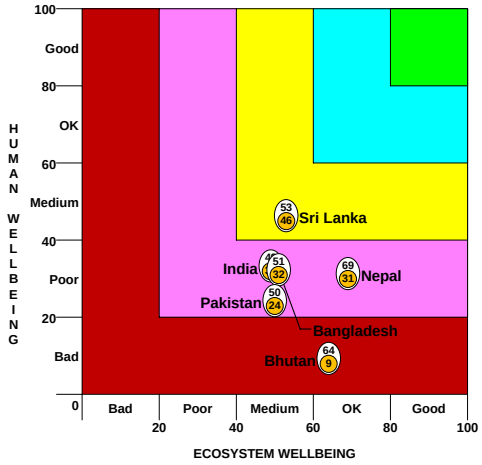

Figure 5: Sequential

Strong use of color denotes the level of sustainability in Figure 5. Ecosystem well-being and human well-being are compared for various countries using standardized values. This approach makes it easy to see the relative progress of countries based on the two indices.

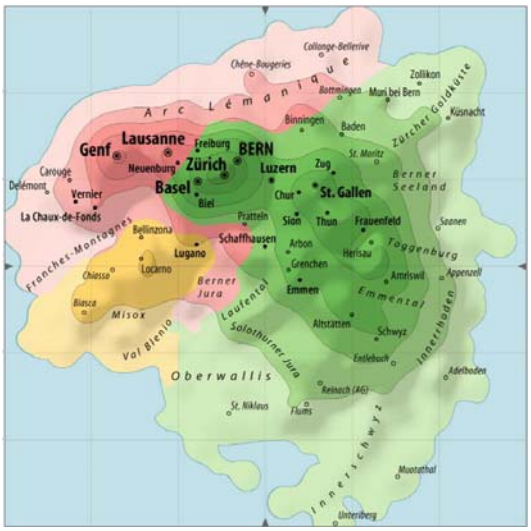

Figure 6: Topographic map

Spatial indicators can also be depicted using maps. The topographic map in Figure 6 represents indicator values and elevations do reflect the actual altitude of the region. While interesting, this approach could be confusing as it requires that people put aside known geography when interpreting the information.

Participants at the conference concluded that methodological questions around indices (including selecting indicators, aggregated and weighting) are only controversial among experts, and that most people just want something that is user-friendly and useful. Further, a successful indicator system relies not only on methodology, but also, and perhaps more importantly, on committee people and organizations. Participants also expressed that indices are mainly communication tools, and that what gets measured, gets funded. Some questioned whether visualization of indicators is reaching audiences – “an image is only one if it has a spectator. Do we have one and who is it?”. Finally, it was pointed out that visualizing does necessarily not remove the risk of “GIGO – garbage in…garbage out”.

More information on the conference and proceedings are available at the following website: **http://www.monet.admin.ch**