Assessing the many dimensions of sustainability

A recent study of Austria is the first to use a multidimensional framework to assess the sustainability of a country year-by-year.

The EU sustainable development strategy integrates economic, environmental and social issues. Assessing sustainability should take into account its multi-dimensional and dynamic nature. For example, analysing trade-offs between reduced resource consumption and emissions, income, employment, human well-being and life satisfaction, among other development objectives.

This recent study assessed sustainability at a macro (wide-scale) level with the multi-criteria method NAIADE (Novel Approach to Imprecise Assessment and Decision Environments). Austria was chosen as a case study as data were readily available, especially on sustainability indicators. Two different time frames were considered:

1. **Long-term analysis for the period 1960-2003.** This involved three sustainability criteria representing the traditional dimensions of sustainability (Gross Domestic Product, life expectancy and CO₂ emissions).
2. **Medium-term analysis for the period 1995-2003.** This involved 16 sustainability criteria including material flows, income inequality and share of renewables in the energy mix.

In both time frames the study varied the sustainability conditions, between ‘strong’ and ‘weak’ conditions. Strong sustainability considers all or the majority of dimensions as important, whereas weak sustainability allows for a disadvantage on one indicator to be offset by an advantage on another. For example, the depletion of a natural resource is permitted, provided that it is compensated by a clear benefit elsewhere.

In the long-term analysis, there is a general move towards increased sustainability between 1960 and 2000 in Austria, particularly when weak sustainability is considered. The trend towards sustainability is less clear when strong sustainability conditions are considered.

The larger number of criteria used in the medium-term analysis and strong sustainability conditions revealed more complex relationships and it was more difficult to identify clear sustainability trends.

The authors point out that every multidimensional assessment is a unique exercise and should be recalculated on a regular basis. The results depend on the methodology used, i.e. whether sustainability conditions are strong or weak and on the criteria used. They suggest that this should be decided upon by the stakeholders participating in the assessment.

Although criteria could vary for different countries, the framework presented in the study could be useful for establishing priorities for developing and evaluating sustainability. Due to the framework’s flexibility, it could use different sustainability conditions, criteria and parameters depending on the situation.

2. See [http://alba.jrc.it/ulysses/voyage-home/naiade/naiahome.htm](http://alba.jrc.it/ulysses/voyage-home/naiade/naiahome.htm)


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