The Pignans Set of Indicators

Carnoules Statement on
Integrated Objectives and Indicators for Sustainable Development

This statement is the outcome of a meeting of 16 European experts in sustainability research. The meeting took place at the Factor 10 Institute in Carnoules/Pignans, Provence, France, from 1-4 May, 2003, in the course of the preparation process for a research proposal on "Governance for Sustainable Development (GoSD)" for the 6th Framework Programme of the European Commission.
The objectives and indicators listed in this statement reflect a European perspective on sustainable development.
The statement represents the state of the art in integrated sustainability indicator development; as the state of the art is necessarily incomplete and work in progress, the definition of some of the indicators may be improved in the future debate, while for other objectives indicators have not been developed at all.

1. Introduction

Following-up the findings of the World Commission on Environment and Development in 1987, it was realised that continued industrial and GDP growth of the type achieved in the 20th century was not sustainable. Instead dramatic changes are needed addressing poverty and environmental degradation. Rapidly growing resource consumption, social tensions, economic migration and violence (war, terrorism) are inflicting an increasing economic, social and environmental burden on world society. Effects from the economic globalisation profit largely to the citizens and states of the North and the elites of the South at the expense of a growing share of world population, which faces increasing marginalization. Incremental and sectoral approaches have led to improvements in most dimensions, in many sectors and in some regions, but major long-term progress toward sustainability can only be achieved by an integrated systemic approach. In order to help translate national and international commitments and policy objectives into reality, we must have at least a broad vision of where we want to be in 20 or 30 years - we need "target scenarios" or "landing places". However, sustainable development is no ideology providing a clear-cut, unambiguous plan for the future, but rather a set of ethically based principles, which make it possible to define a range

of sustainable solutions to any problem, i.e. a rather broad “landing place”. To monitor any development and its compliance with such SD principles, an appropriate set of indicators for sustainable development is essential. These indicators must be capable of estimating the contribution of each individual step toward sustainability, while describing the distance of the current situation to the envisioned “landing place”. Furthermore, these indicators must be directionally safe in themselves, they should be internationally harmonized, sufficiently simple so as to be widely understood and used and they must allow fast and low-cost application. The number of indicators depends on the purpose they are intended to serve and should take the users’ capabilities and constraints into account. At the level of decision-makers, favouring comprehensive and integrated analyses needs as few indicators as possible. 20 to 30 indicators are broadly considered to be the maximum number which can be communicated.

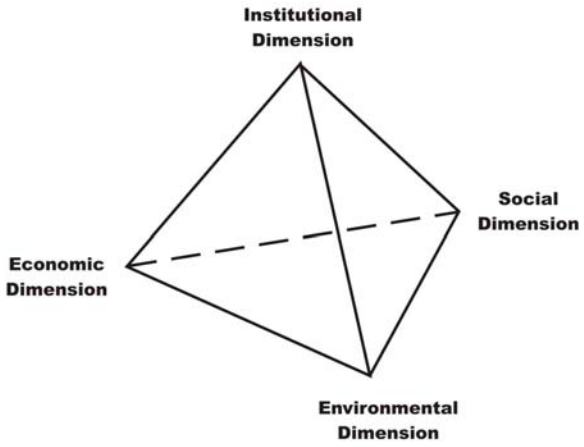
2. The overarching objective of sustainable development

The overarching objective of sustainable development (SD) is to secure and increase the quality of life for all people as a precondition for individual happiness. This objective is based on a long-term perspective (many generations), which requires a co-evolution of the anthroposphere and the biosphere. This means that the evolution of the anthroposphere towards a better life for all must not take place at the expense of the biosphere. Furthermore, it requires human rights, gender equity, cultural identity, absence of discrimination and diversity. Sustainable development refers to a process and not to an end state and is therefore positively concerned with change.

3. Four dimensions of sustainable development

Sustainable development has four dimensions, the social, the economic, the environmental and the institutional one. Whereas the environmental and the economic dimension are rather self-explaining, the borderline between the social and the institutional is disputed. We understand the social dimension to cover the population, i.e. the intra-human capabilities of people, and the institutional to refer to society, i.e. the interpersonal processes and arrangements of humans amongst each other, including for instance such important phenomena as culture or governance structures and mechanisms. The prism of sustainability (see Figure 1) is a means to visually represent not only the four dimensions, but also all their interlinkages.

Figure 1: The prism of sustainability



Key policy objectives and targets can be allocated to each of these four dimensions. Reduction of environmental pressures, social cohesion, participation, and competitive economy – no doubt, all these are important sustainability objectives, but how do they fit together? The great political challenge is to integrate the dimensional objectives and policy goals into a joint perspective of sustainable development. To reconcile the partly complementary, partly competing goals it is essential to take the interlinkages of these dimensions into account, as this is where synergies and compromises must be sought. For instance, resource efficiency helps bridging the gap between environment and economy (thus, resource efficiency is not an environmental but rather an environment-economic interlinkage indicator), and distribution of income is an interlinkage of the economic and the social dimension.

4. Objectives and indicators for the four dimensions

The group of European experts, which met at Carnoules/Pignans, suggests that to achieve the overarching goal of sustainable development, society should organize itself in such a way that it achieves the following objectives. These objectives are based on systems thinking on the relationship among the economic, environmental and social systems. The objectives with regard to all four dimensions and their interlinkages constitute a matrix. Individual objectives take on a different meaning if taken out of the matrix.

The *economic dimension* refers to the system of production and consumption (including finance) and refers to the market based and to the unpaid economy.

Objective	*Indicator(s)*
sufficient supply and goods and services	GDP/capita[1]
efficient wealth creation	total factor productivity
economic system's evolution and competitiveness	net investment, R&D expenditures, accumulated public and private debt

The *social or human dimension* refers to individual development (intrapersonal).

Objective	*Indicator(s)*
social cohesion, social security	UNDP Human Poverty Index HPI 2
access to education	Education expenditure per capita[2]
identity, self-realisation	unemployment rate[3]
security	crime rate, corruption rate

The *environmental dimension* refers to the biosphere

Objective	*Indicator(s)*
protect eco-systems' functions and evolution	percentage of protected reserves
enhance (genetic, species, and ecosystems) biodiversity	average size of protected reserves (research on interconnections needed)
reduce anthropogenic resource throughput and degradation of land and sea	TMC per capita[4], land use intensity per capita, including "ecological rucksacks"; energy use per capita (research needed for the land use part)

The *institutional dimension* refers to societal processes (interpersonal). Institutions include organisations, mechanisms, values and orientations. According to this definition, institutions are the key tool for the governance of sustainable development. It is essential to develop

[1] One participant suggested replacing GDP/capita by an economic indicator, which is explicitly including sustainability aspects, such as the indicator of *genuine savings*. However, the majority did not agree on this point, as GDP figures are essential for tax revenue and planning of public spending, and thus cannot be substituted by an indicator which offers a different message. Consensus was expressed on the demand that GDP must not be misinterpreted as an overall indicator for human well-being.

[2] One participant suggested that not a flow indicator like investment but a state indicator like percentage of population with at least 2nd grade school degree could be more meaningful. Others argue that such an indicator reflects the results of past investment, but not current policies.

[3] While employment is central to identity and self-realisation, it does not cover these objectives exhaustively.

[4] The authors recognize that data quality and availability of unused and indirect material flows necessary to calculate total material consumption TMC (including hidden flows) is significantly lower than those for direct material flows. However, the authors regard the inclusion of these flows as particularly relevant for sustainability-related analyses and demand for the improvement of data quality and availability.

appropriate institutional settings, which allocate responsibilities at the highest possible level and ensure effective implementation of comprehensive and holistic politics for sustainable development. Guiding principles for governance for sustainability are accountability, transparency, legitimacy and reliability. For the institutional dimension, only objectives are stated.

Objective	*Indicator(s)*
ensure structural change to reflect the need for societal development	to be defined
improve societal interchange, communication and intercultural learning	to be defined
protect cultural diversity	to be defined
achieve distributional fairness and justice, equity and sufficiency	to be defined
develop anticipatory capacities for the democratic process	to be defined

5. Objectives and indicators for the social-economic-environmental interlinkages

The following objectives and indicators for the interlinkages between the three explicit dimensions of sustainable development (economic, social, environmental) can be stated:

The objectives and indicators for the *economic-environmental* interlinkage are:

Objective	*Indicator(s)*
minimise the burden for the environment: improve resource productivity (mass, energy and area)	TMC/GDP[5]; land use pattern productivity, energy?
minimise damage for the economy: reduce costs related to environmental degradation (damage costs, compliance costs, administrative costs, avoidance costs…)	damage costs/GDP, compliance costs/GDP, avoidance costs/GDP
minimise the impacts on health and environment: minimize outputs of known (eco-)toxics	(research on qualitative indicators needed)

The objectives and indicators for the *socio-environmental* interlinkage are:

Objective	*Indicator(s)*
equitable access to food, drinking water and natural resources	(indicator must be country- or region-specific)
provide healthy and secure shelter	Proposals include “homes judged unfit to live in” and "% of the population living in sub-standard housing”
readjust the demand for resource consumption, environmental impact of household consumption	MIPS (including rucksacks) of consumption basket resource consumption and actors’ matrices for construction and housing, mobility and nutrition
provide and secure environmental quality for the	years of life expectancy lost by

[5] See FN 4 above.

health of human beings	environmental health problems

The objectives and indicators for the *socio-economic* interlinkage are:

Objective	*Indicator(s)*
enhance the distributional justice (equity principle)	Gini coefficient
efforts (paid and unpaid) should be devoted fairly to generate sustainable incomes	labour force participation, gender distribution of unpaid work
provide opportunities for paid labour to all willing and able to work	unemployment rate
increase knowledge intensity	See Human Development Report of UNDP : to be defined
refocus innovation and adapt its speed to societal demands	to be defined

The 16 participants of the Carnoules/Pignans meeting:

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