THE ANALYSES OF SUSTAINABLE DEVELOPMENT RATIOS

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Abstract:
The sustainable development concept imposed itself because the progress of conventional economy cannot ensure the needs of millions of people and at the same time compromised the possibility of future generations to ensure those needs. The economical, social and ecological dimensions of the sustainable development may be captured by ratios characteristic of this issue, at a local, regional and global level, as well as by the connection ratios, reflecting the relationships existing among such fields.

Key words: *development sustainable, economical growth, ration.*

JEL classification: *O13, O14, O29, Q01, Q27, Q34, Q56*

Sustainable development is a strategy whereby communities search ways of economical development, while benefiting from the local environment, or creating benefits for the life quality. It has become a milestone guide for numerous communities, which have discovered that the traditional interpretation, planning and development manners generate, rather than solve, the issues related to the environment or to the social area. In the cases where traditional interpretation may lead to crowding, extension, pollution and excessive resource consumption, sustainable development proposes genuine and long-lasting solutions to reinforce our future.

The concept of sustainable development is defined in Bruntland Report as meeting the needs of the present generation without compromising the ability of future generations to meet their own. Bruntland Report gives us definitions of sustainable development concept and Agenda 21 suggests a series of reachable strategies used for the concept implementation.

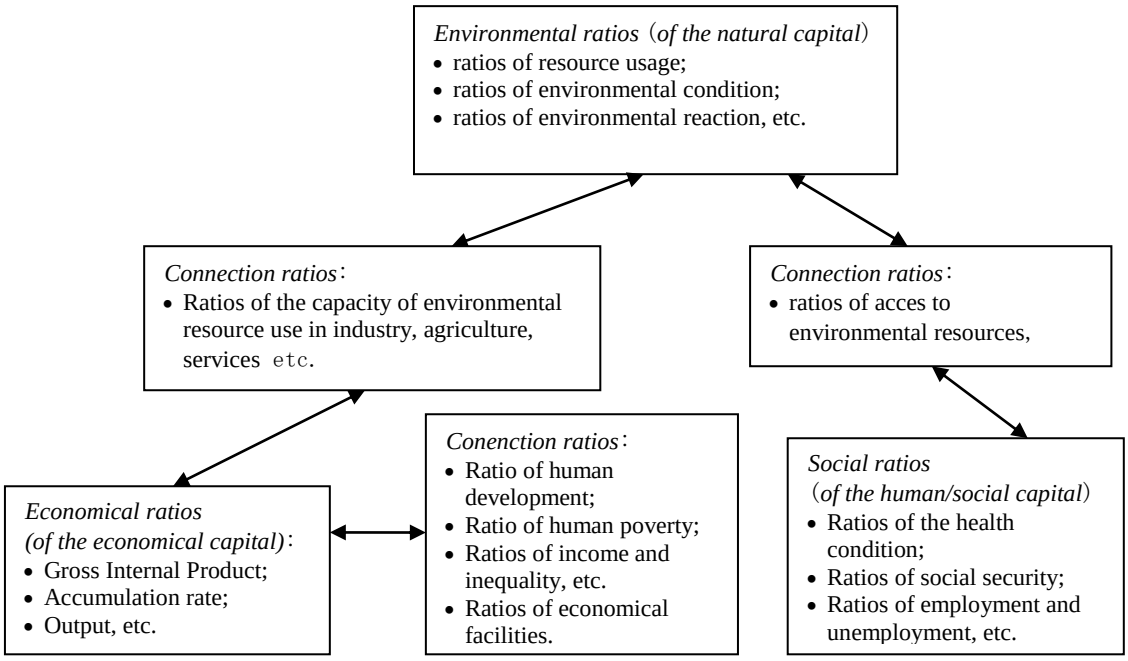
Sustainable development simultaneously includes social, economical and environmental targets. Therefore, the assessment of sustainable development requires approaching these fields and the interaction thereof, by focusing the attention on the various capital types. The ratios of sustainable development shall reflect the magnitude of the economical economic, ecologic and human capital, as well as in what degree the population has access to such types of capital. An integrated ratio system complying with such requirements is difficult to build, in such a way as to ensure the completeness and information compatibility conditions.

The economical, social and ecological dimensions of sustainable development may be reflected by the ratios particular to such issues, at the local, regional and global level, but also by connection ratios, connecting such segments, which ratios one may place at the border between the ratios of these three types of capital.

The primary purpose of generating the ratios of sustainable development resides in the integration of the economical, social and environmental issues within the political decisions enacted at all levels. This incorporation implies the partaking of all traditional fields of economy and Government activity, such as: economical planning, agriculture, health, energy, water and natural resources management, industry, education, environment, etc. The practical issues of integration are reflected in the ratios of sustainable development, which include the economical, social, environmental and institutional ratios and must fall under the scope of certain mechanisms for the

institutional integration, such as national councils, committees for sustainable development, as well a sustainable development strategy.

Figure 1. *Ratios of sustainable development*



Source: Stănciulescu Gabriela, *Management of Sustainable Tourism in Urban Centers*, Economică Publishing House, Bucharest, 2004, page 16.

The economical development represents a necessary condition, as well as a result of economical growth. The development precedes the economical growth, namely the latter may not continue for the long term, without technological innovation and without structural changes, which are only possible in a developed country.

The economical growth may be quantified by a series of statistical ratios, such as production and consumption level, employment and unemployment rates. It is essential, in order to render comparisons between countries and times consistent, to build series of data (chronological and geographical) based on economical definitions and methodologies.

The long-term trend (also designated as trend, secular tendency or long-term tendency) is materialized under the influence of long-term systematic factors. In view of statistically characterizing the long-term trend, mechanical and analytical methods may be used. For the statistical study of the seasonal component, the data need to be available, systematically classified according to time spans shorter than one year. The seasonal component may be determined as follows: seasonal variations (absolute values) and the seasonal ratios (relative values).

One of the main ratios whose progress provides information regarding the economical growth is the actual Gross Domestic Product (GDP), namely GDP in current prices, rectified according to price modification. The genuine results may also be measured by alternative ratios, such as the Gross National Product (GNP), Net Domestic Product (NDP) or Net National Product (NNP), measured in real terms.

Other ratios may also be used for measuring the economical growth, such as: accumulation rate, work efficiency, unemployment rate, as well as the ratios envisaging the social size of welfare, or equality of opportunities and chances for the various segments of population: ratio between male and female in elementary and secondary schooling coverage, infant death rate, maternal death rate, weight of individuals enjoying health care.

Together with the known ratios of the social development degree: human development ratio, poverty ratio, Gini ratio, other ratios may as well be used, such as: incidence of foreign poverty – percentage of populace whose income is below poverty threshold. The inequity in income distribution shall be quantified by statistical ratios, such as distribution of income or Gini quotient. Nevertheless, the interpretation of rising Gini quotient or of distribution of income (measured by dispersion or square average deviation), deemed as a negative factor of welfare, contradicts Pareto's optimum principle and equals the use of a function including negative weights over the increase of high-revenue persons' income.

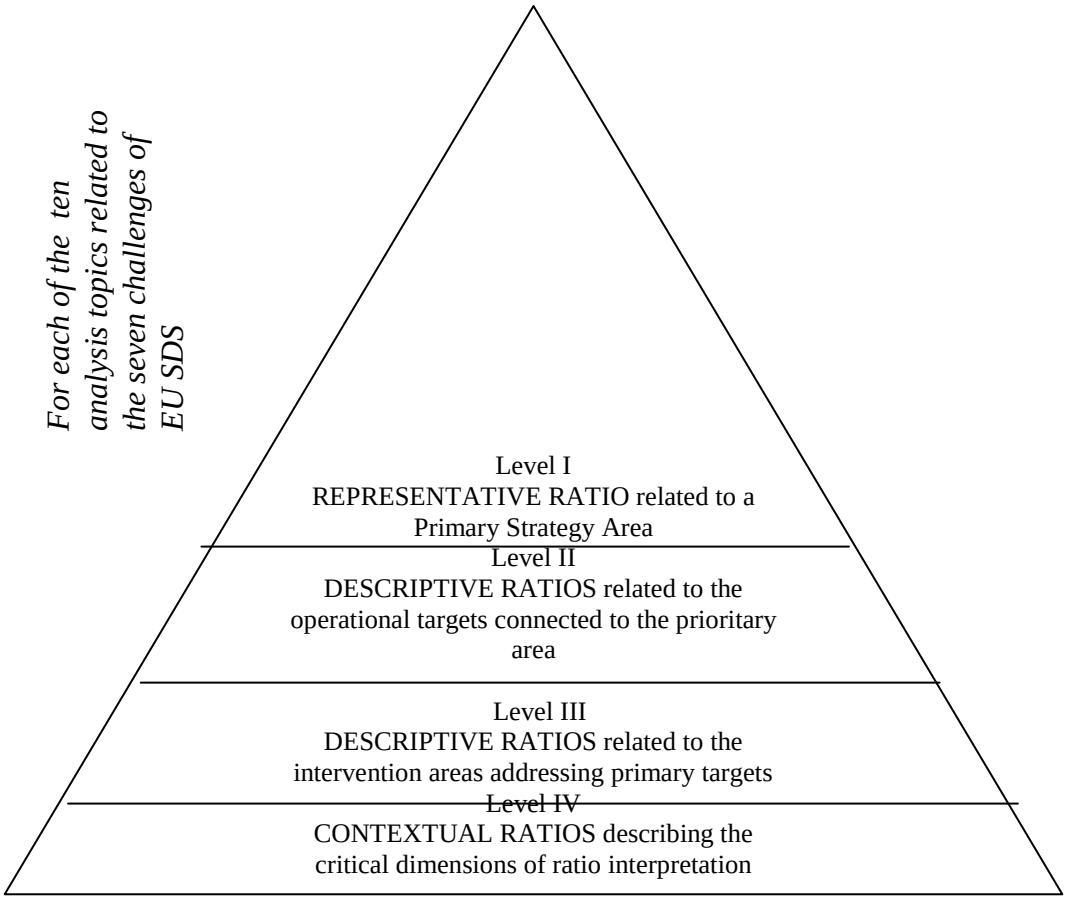
The monitoring of the development trends also using the ratios outside the business activity –precedes the formulation of sustainable development principles and was evidenced simultaneously with the process for defining the sustainable development strategies drafted under the auspices of the United Nations Organization and of the European Union. A recent report of the International Institute for Sustainable Development (IISD) of Canada sets forth a list of six hundred ratio systems for monitoring the processes and policies of sustainable development, drafted at a national, sub-national and international level. Such monitoring instruments were created by a wide range of entities, from undertakings or civil associations up to locale administration, national governments, international financial institutions, expert groups and research centers.

The review, in 2006, of the European Union's Strategy for Sustainable Development was primarily focused on the establishment of a monitoring process to harmonize the specific national requirements of the member states with the coordination need at the EU institution level.

The current ratio system prepared by Eurostat for monitoring the Strategy for Sustainable Development came into being together with the definition of the sustainable development concept and the introduction of the global approach within the United Nations' Commission for Sustainable Development (UNCSD). Simultaneously, the capabilities of existing statistical reports to reflect the new concept begun to be tested. The tracing of the confluence among these three dimensions (economical, social and environmental) forms part of the conceptual framework of the European Union's Strategy for Sustainable Development and reflects in the structure of the informative ratio set related to monitoring the implementation of the Strategy, envisaged by Eurostat. A first incomplete version of this set was published in the first assessment report (2007) of the updated European Strategy. In its current form, the monitoring mechanism highlights certain ratio categories that are still undergoing processing. The existing ratio set is deemed appropriate for monitoring the quantitative targets of the EU Strategy, but incomplete or insufficient for the tracing and assessment of the qualitative targets of the same Strategy.

In consideration of the ratio structure generated by Eurostat for the Monitoring Report of the European Union's Strategy for Sustainable Development, each dimension of the Strategy is assigned a representative ratio (Level1), a ratio set related to the subordinated operational targets (Level 2), detailed by descriptive ratios in the intervention areas of related policies (Level 3). Another set of ratios, separate from such structure, is included for convenience purposes, describing phenomena which are difficult to be given a normative interpretation or whose reaction to intervention is yet unidentified. They provide significant details from within the framework of each topic and are deemed indispensable for the interpretation of the ratios ranked in the levels 1-3 of the reporting structure.

Figure 2. *Eurostat Ratios supervised at national level*



Source: National Strategy for Romania's Sustainable Development, 2008 , page 5, http://strategia.ncsd.ro/docs/indicatori_dezvoltare.pdf

The ten topics of the Eurostat ratios envisage the targets of the EU's Sustainable Development Strategy as an extension from the economical dimension, to those referring to society and environment, up to the Strategy's institutional dimension.

The representative ratios for each topic are ratios having a high public awareness degree and practiced use in research. They were selected due to their communicative value, are deemed to be sound from the methodology and qualitative standpoint, and have been supervised in all member states of the European Union for at least five years.

Pursuant to the Eurostat report in respect of the assessment of monitoring and reporting methodology of Sustainable Development Strategies, published in 2007, by the current capacity of the National Statistics Institute, Romania monitors only 13 ratios related to the priorities and targets of sustainable development covered in the Strategy.

Therefore, the maximization of worldwide welfare, described by the concept of sustainable development, requires consideration of the environment system, with all components thereof: status, stress, impact and reaction. The necessity of an integrated approach may be satisfied by conducting certain research in quantitative terms. Scientific approaches, also including specific polling, may be used for the purpose of identification or acknowledgement of the most stringent environmental issues at the local, regional or global level.

Table 1.

Reporting topics and representative ratios of sustainable development

Item	*Reporting Topic*	*Representative Ratio*	*Related Target*
1.	Social-economical development	Growing rate of the gross domestic product per capita	Economical prosperity
2.	Sustainable consumption and production	Resource productivity	Sustainable consumption and production; Preserving and management of natural resources
3.	Social inclusion	Populace exposed to poverty risk, excluding social transfers	Social inclusion, demography and migration
4.	Demographic change	Employment rate of the populace, limit retirement age	Social inclusion, demography and migration
5.	Public health	The average healthy life period per gender and the average probable lifetime at birth, per gender	Public health
6.	Climate change and energy	Overall hothouse gas emissions; Consumption of regenerative power resources	Climate change and energy
7.	Sustainable transport	Energy consumption for transportation	Sustainable transport
8.	Natural resources	Index of common bird species, Production from fishing over the fixed biological limits	Preserving and management of natural resources
9.	Worldwide partnership	Assistance for development – official funds	Worldwide poverty and sustainable development
10.	Proper Government	Under study	Cohesion of Government policies

Source: Data processed by the author according to the National Strategy for Romania's Sustainable Development, 2008, http://strategia.ncsd.ro/docs/indicatori_dezvoltare.pdf

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