ROMANIA ON THE PATH TO SUSTAINABLE DEVELOPMENT. COMPARATIVE ANALYSIS WITHIN THE EUROPEAN UNION

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Nowadays, the issues of sustainable development are of great interest and importance, as countries, organisations, institutions worldwide are still searching for the right solutions leading to human well-being and life quality in a society socially acceptable, economically viable and environmentally sustainable, in an integrated vision between states and generations. Due to the difficulties of measuring such a complex, multi-dimensioned concept, one of the main questions refers to necessity and the possibility of determining countries' progress towards sustainable development. In this respect, there are a very large number of initiatives and efforts to develop the appropriate indicators; yet, there is no one agreed method.
In this generous context of analysis, the paper aims to offer some answers regarding Romania's progress towards sustainable development, based on a comparative analysis within the European Union, using data provided by three of the most widely used indicators for measuring sustainable development: Human Development Index, Environmental Performance Index and Ecological Footprint. The research methodology uses the comparative analysis and synthesis of data, followed by a dissemination of the results in order to express a personal opinion on the topic.
The research results are far from being optimistic, highlighting a serious gap between Romania and the other member states in terms of progress towards sustainable development. Therefore, they call for immediate action and increased efforts, so that European Union's objectives of real cohesion and of becoming one of the global leaders in supporting sustainable development can be reached. The merit of this study is its contribution with an original research to the efforts of assessing Romania's progress on the path to sustainable development, which may be particularly important for both researchers and policy makers. Due to some limitations induced by the methodology, the research opens the way for future studies, using complementary data and methodology.

Key words: sustainable development, sustainability indicators, human development, environmental performance, comparative analysis
Cod JEL: Q01, R11

1. Introduction

Sustainable development has become in the last decades the development paradigm of the world we live in today and countries, organizations, institutions worldwide have committed towards its goals. Nowadays, the subject is of great importance, as society is still searching for the right solutions leading to sustainable development. In this respect, one of the greatest challenges is to evaluate the progress towards sustainable development, as any decisions for further action can not be taken without having a clear picture of the current situation. Therefore, measurements are necessary. There are a very large number of initiatives and efforts to develop the appropriate indicators to measure sustainable development and, although there is no agreed method due to the complexity of the subject, some of the indicators are widely recognized and used.
In this generous context of analysis, the paper aims to offer some answers regarding Romania's progress towards sustainable development, based on a comparative analysis within the European Union, using data provided by three of the most common used indicators for measuring sustainable development: Human Development Index, Environmental Performance Index and Ecological Footprint. The paper is structured in two parts: the first part is dedicated to present

some landmarks in literature regarding the current issues of sustainable development and the second part presents the research results, according to our objective. The paper ends with a section of conclusions regarding the main ideas of the empirical research, with implications for further research.

2. Literature review

Sustainable development is today a landmark of a world in change, one of the key themes emerged from the collective concerns and aspirations of the world's peoples in the last half of the twentieth century (National Research Council, 1999: 22).

The study of sustainable development has been of great interest for researchers and policy makers and it has been the subject of very complex debates worldwide, its approaches evolving along with the permanent changes in our globalised society, in the common effort to offer the right solutions for that kind of development "that meets the needs of the present without compromising the ability of future generations to meet their own needs", as stated by one of the most frequent used definition, given by the Brundtland Commission (WCSD, 1987:8).

The original emphasis on economic development and environmental protection has been broadened and deepened to include the commitment to advancing human well-being (including increased life expectancy, education, equity and opportunity) and life quality in a society socially acceptable, economically viable and environmentally sustainable, with the added constraint that this development needs to take place within the ecological limits of the planet. Current debates focus on considering interconnections and interdependences between systems which call for an integrated approach and coordination, simultaneously pledging for equity between states and generations.

Sustainable development has received a global political dimension: an action plan for sustainable development, called Agenda 21, was launched in 1992 at Rio's Earth Summit (UNCED), followed by other initiatives: commitment to sustainable development was reaffirmed in 2000 when the UN Millennium Development Goals was adopted (UNGA), in 2002 at the World Summit on Sustainable Development in Johannesburg (WSSD) and more recently, during the preparations for the 2012 Earth Summit (UNCSD).

In the interim, sustainable development as a concept, as a goal and as a movement has been integrated in strategies, calling on all countries to integrate its principles into national policies and programs. Locally and globally, sustainable development is now central to the mission of countless international organizations, national institutions, corporate enterprises, sustainable cities and locales (Kates, Parris and Leiserowitz, 2005: 3).

As one of the key players in the present era of globalization, The European Union responded to all these efforts and adopted in 2001 its first Strategy of Sustainable Development (European Commission), as sustainable development has become one of its major political objectives. Due to the persistence of some unsustainable trends in many areas and the necessity to intensify efforts, the strategy was revised in 2005 and 2009 for a unitary and coherent strategic vision, completing The Lisbon Strategy and aiming to become a catalyst for changing the behaviour of the European society towards sustainability.

For Romania, as well as for the other EU member states, sustainable development is a perspective of the national becoming, resulting into a new development paradigm. More formally, Romania committed to sustainable development since 1990, when it changed its development model, but, as a member state, Romania has the obligation to adhere to and respect EU commitments in this direction. Thus, in 2008 Romania adopted its National Strategy of Sustainable Development (Romanian Government).

Still, one of the main issues of the subject refers to necessity and the possibility of determining countries' progress towards sustainable development, as it is difficult to measure such a complex concept and there is no one agreed method. Combining global, national and local initiatives, there

are literally hundreds of efforts to define appropriate indicators and to measure them (Parris and Kates, 2003), as these indicators must not only reflect changes in quality of life, but must also show if these changes are compatible with the planet's current ecological limits. Three of the most widely used indicators, recognized as relevant for measuring sustainable development, are: Human Development Index (UNDP, 2011) as an indicator of development, Environmental Performance Index (Yale, 2012) as an indicator for environmental sustainability and Ecological Footprint (Global Footprint Network, 2010) as an indicator of sustainable consumption.
UN Human Development Index (HDI) provides an overview of human well-being, measuring development in terms of life expectancy, educational attainment and income and serves as a frame of reference for both social and economic development. *The Environmental Performance Index (EPI)*, developed by Yale University and Columbia University, evaluates environmental sustainability relative to the paths of other countries, covering both environmental health and ecosystem vitality. *Ecological Footprint* is a tool that measures our natural resource consumption and our global environmental impact, allowing us to work out whether there are enough resources in the world to sustain our activities. A large body of literature exists examining the strengths and shortcomings of the Ecological Footprint approach; yet despite acknowledged limitations, judging from the vast number of references, it remains a leading biophysical accounting tool for comparing present aggregate human demand on the biosphere with the Earth's gross ecological capacity to sustain human life.

3. Research Methodology
The research goal is to provide a representative imagine of Romania's progress towards sustainable development, in comparison with performances of the other EU member states.
The research methodology is specific for the purpose and the nature of the research and includes literature review, comparative analysis and synthesis of data, followed by a dissemination of the results in order to express a personal opinion regarding the research results. *The literature review* is based on bibliographic resources (books, studies, articles) and official documents (e.g. declarations, strategies, reports) in order to highlight the importance and the opportunity of the subject. *The comparative analysis* is based on processed and summarized data, according to the three indicators mentioned above: Human Development Index, Environmental Performance Index and Ecological Footprint. We use this triple set of indicators evaluating human development and ecological sustainability as together, they offer a potentially more meaningful evaluation of progress and trade-offs than would be possible using either of them, on their own.
The merit of this study is to contribute with a relevant research in an area more difficult to approach, due to its complexity. Although providing a clear imagine of the research topic, the research methodology generates some limitations, as the metrics employed are approximations and do not cover the full spectrum of sustainable development, offering information for specific moments and therefore, representing only a moment in the evolution of the phenomena. Certainly, more complete indicators for measuring progress toward sustainable development are necessary. However, the study may be a starting point for further research, by analyzing other dimensions of the topic, using complementary methodology.

3. Research results
As stated in the research methodology, our analysis is based on data according to Human Development Index, Environmental Performance Index and Ecological Footprint. We note that the research results must be interpreted in the specific context of the fact that Romania, unlike other countries with tradition, has become preoccupied with sustainable development issues only recently.
Human Development Index provides a composite measure of three basic dimensions of human development: health, education and income, expressed as a value between 0 (minimum value)

and 1 (maximum value). UNDP defines an HDI score of 0.8 as the limit between high human development and very high human development.
According to 2011 Ranking, Romania's HDI is 0.781, which gives the country a rank of 50 out of 187 countries with comparable data. Considering the EU countries in this ranking (Fig. no.1), Romania occupies the second last position (only Bulgaria has a lower score, the lowest in EU).

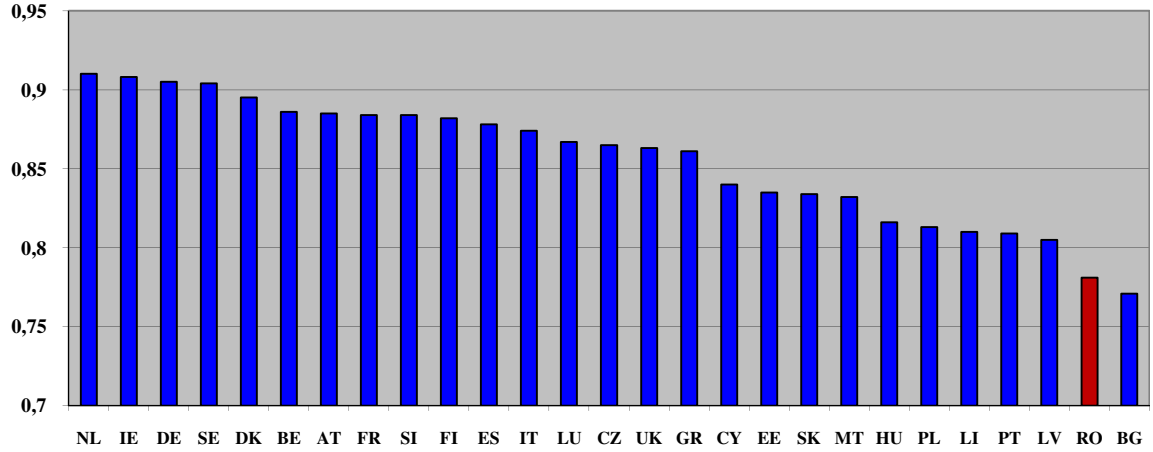

Figure no. 1 HDI 2011 Ranking for EU countries

Sourece: UNDP**,** The 2011 Human Development Report, 2011

Romania and Bulgaria are the only two countries in EU with scores below 0.8, therefore included in the group of high developed countries, while all the other EU member states score above 0.8 and are considered countries with very high human development (Netherlands has the highest score of 0.91). Although, as a trend Romania is placed above the regional average, figures still highlight its very large gaps in well-being and life chances, as compared to other countries in EU.
According to Environmental Performance Index 2012, based on 22 performance indicators in the following policy categories: environmental burden of disease, effects on human health and ecosystem effects of water and air pollution, biodiversity and habitat, forestry, fisheries, agriculture and climate change, results are even more concerning: Romania has a country rank of 88 out of 132 investigated countries, with a score of 48.34. Among EU countries (Fig. no.2), Romania occupies the last position and it is also very far from EU average. Considering EPI Trend, Romania has one of the best performances (3rd in EPI Trend Ranking), but that seems not to be enough and there is still more to be done in order to reduce gaps.

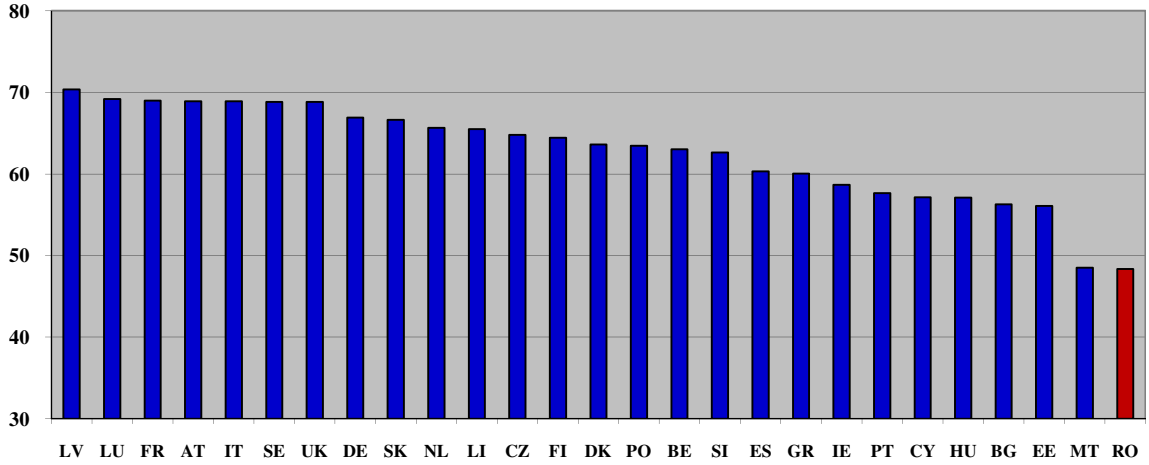

Fig. no. 2 EPI Ranking 2012, EU countries

Source: Yale University and Columbia University**,** 2012 Environmental Performance Index and Pilot Trend Environmental Performance Index, 2012

The Ecological Footprint is another measuring tool, allowing us to calculate human pressure on the planet. It represents the amount of biologically productive land and sea area necessary to supply the resources a human population consumes and to assimilate associated waste. In contrast to the Footprint, which addresses demand on ecosystems, Biocapacity describes the supply side, the productive capacity of the biosphere and its ability to provide a flux of biological resources and services useful to humanity. The world-average Ecological Footprint in 2007 (latest available results) was 2.7 global hectares per person. With a world-average Biocapacity of 1.8 global hectares per person, this leads to an ecological deficit of 0.9 global hectares per person. For ecological footprint (Table no. 1), Romania scores as the world average, best score in EU, but as shown by the Biocapacity score, which is lower than the Ecological Footprint (among the lowest in EU), it proves not to have enough ecological resources within its own territory to support the consume, so it is an ecological debtor country.

Table no. 1 Ecological footprint of EU contries, 2007

Country	**Ecological Footprint in gha/pers**
Romania	***2.71***
Hungary	2.99
Slovakia	4.06
Bulgaria	4.07
Poland	4.35
Portugal	4.47
Lithuania	4.67
United Kingdom	4.89
Italy	4.99
France	5.01
Germany	5.08

Country	**Biocapacity in gha/pers**
Sweden	9.75
Estonia	8.96
Latvia	7.07
Denmark	4.85
Lithuania	4.36
Ireland	3.48
Austria	3.31
France	3.00
Slovakia	2.68
Czech Republic	2.67
Slovenia	2.61

Country	**Ecological remainder (if positive) in gha/pers**
Finland	6.30
Sweden	3.87
Latvia	1.43
Estonia	1.08
Lithuania	-0.31
Hungary	-0.76
Romania	***-0.76***
Slovakia	-1.38
Bulgaria	-1.94
Austria	-1.99
France	-2.01

Austria	5.30	Hungary	2.23	Poland	-2.26
Slovenia	5.30	Bulgaria	2.13	Slovenia	-2.69
Greece	5.39	Poland	2.09	Ireland	-2.81
Spain	5.42	Finland	12.46	Germany	-3.16
Latvia	5.64	***Romania***	***1.95***	Portugal	-3.22
Czech Republic	5.73	Germany	1.92	Denmark	-3.41
Sweden	5.88	Greece	1.62	United Kingdom	-3.55
Finland	6.16	Spain	1.61	Greece	-3.77
Netherlands	6.19	Belgium	1.34	Spain	-3.81
Ireland	6.29	United Kingdom	1.34	Italy	-3.85
Estonia	7.88	Portugal	1.25	Czech Republic	-3.06
Belgium	8.00	Italy	1.14	Netherlands	-5.16
Denmark	8.26	Netherlands	1.03	Belgium	-6.66

Source: Global Footprint Network, Ecological Footprint Atlas 2010, 2010

As a general appreciation, research results highlight that there is a serious gap between Romania and the other member states in terms of progress towards sustainable development and immediate action is needed.

4. Conclusions

As presented above, the research results regarding Romania's progress towards sustainable development in comparison with the other EU countries are far from being optimistic. Romania still has an intensive resource consumer economy, a society and an administration still in search for a unitary vision of sustainable development. Romania has to reduce considerable economic, social and technological gaps, as compared to EU countries. The goal of reducing these gaps is, truly, the way to follow towards human development, in order to reach a real cohesion within the European Union.

The merit of this study is its contribution with an original research to the efforts of assessing Romania's progress on the path to sustainable development. This may be particularly important for both researchers and policy makers, since it provides a clear image of an area currently perceived as difficult to approach and it opens the way for future studies, using complementary data and methodology.

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