

A comparative analysis of the sustainable development indicators in case of Romania, Poland and Bulgaria, 2007-2012

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Abstract

The European Union strategy in permanent development shows coherent actions that make UE keep in mind the economical development requests by the actual and future governments' assurance of a quality life and an education dedicated to durability. This way, we have to be able to use our resources efficiently, to see the social and ecological impact of the innovations in economy so that our actions would lead to well being, social cohesion and environmental care. For that matter, EOROSTAT takes into account a number of indicators that show the UE strategy of permanent development. These indicators are presented in ten themes that have social, economical and environmental indicators. In order to highlight better Romanian's situation regarding the indicators' modifications in sustainable development according to EUROSTAT, the aim of this work is to show a comparative analysis of the indicators of sustainable development for Romania, Poland and Bulgaria. The analysis is made on ten themes comparing our country' s position with the other two countries.

Keywords: *sustainable development, sustainable development indicators, socio-economic development, social inclusion, strategies, competitiveness.*

1. Introduction

Outlining a new type of economical development of mankind focused around sustainable development and identifying effective tools for achieving all of its dimensions, which became the "core" discussions of all issues on economic growth and the environment. We can say that sustainable development is understood as a type of growth the opposite type of growth that prevailed nineteenth century and twentieth century and which revolved around the idea of *"using the planet's natural resources, forms of conventional energy and unconventional ones while protecting and preserving our environment" [1].*

Sustainability has different meanings for each of us depending on many factors, and we refer here to: level of education, lifestyle, personal development level. The best known definition of sustainable development appears in the Brundtland Report, according to which sustainable development is the kind of development that involves

"meeting the needs of present generations without compromising the ability of future generations to meet their own needs." [2] But there are experts who believe that this definition is too vague, in leaving room for questions like: " Does anyone want a vulnerable development or the high lifestyle standards we enjoy today not to be transmitted to the next generations? Who can say exactly how unstable is the current development model? Or could someone provide the needs of future generations? [3]

The definition does not respond to these conceptual and methodological problems thus the sustainable development has been complemented with the requirement of reducing adverse environmental impacts in order to obtain more goods and services with less consumption of natural capital [4].

In fact, it is quite easy to identify the importance of sustainable development as it offers a new way to organize society. In the past years concerns for implementing the principles of economic sustainability have grown so a number of strategies for sustainable development at national and European level but also worldwide were built. In the European Union now there is the Europe 2020 strategy, which aims to increase the competitiveness and innovation of member states as a solution to increasing GDP. The U.E. number one priority is to find ways and identify measures to be taken, to shape a viable strategy to reform the financial system, to ensure budgetary consolidation, to determine a sustained raise. In the desire to be successful, the Europe 2020 Strategy is based on the thematic approaches referring to objectives and priorities and preparation of country reports, allowing Member States to develop their own strategies tailored to the specific and targeted to achieve economic growth since 2007 - 2008.

2. Sustainable development indicators calculated by Eurostat

Eurostat calculates and monitors indicators that EU Strategy sustainable development presenting coherent actions that make the EU take into account the economic requirements of sustainability and has the overall objective to achieve a quality life by present and future governments, being directed toward people who must be educated in the spirit of sustainability. We must become able to effectively use resources, to pursue social and environmental impact of innovations implemented in the economy, should that through our actions to reach prosperity, social cohesion and

environmental protection. Indicators are presented as a pyramid consisting of 3 levels - level 1 represents the general objectives, level 2 and level 3 operational objectives actions, complemented with contextual indicators derived from information in the base of the pyramid (Figure 1), but are not directly monitored by SDS.

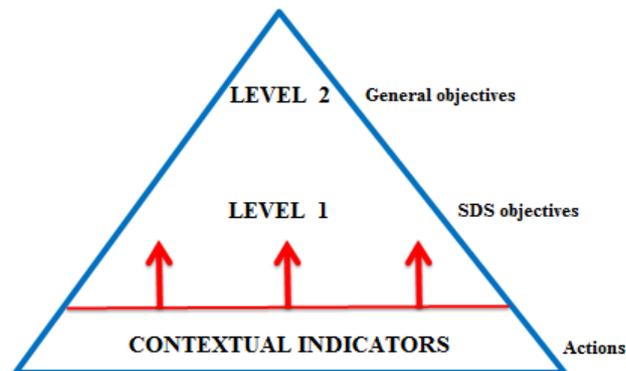


Figure 5. Levels of sustainable development indicators

Source: adapted from Eurostat 2009

Sustainable development indicators presented by Eurostat examine all dimensions of sustainable development, but their classification is based on the same criteria [5]. These indicators are presented in the ten themes that are composed of both indicators of social, economic and environmental indicators of economic size indicators not being separated from other dimensions. Each theme takes place on the three levels above.

3. Sustainable Development of Romania, Poland and Bulgaria in 2007 and 2012

In this paper I wish to analyze Romania's suggestions regarding the changes of the sustainable development indicators calculated according to EUROSTAT compared to the same indicators for Poland and Bulgaria. The analysis is made for the ten themes, comparing the position of our country with the position of the other two countries.

Regarding the first issue under review "socio-economic development" it appears that the three countries are situated in the second part of the ranking. In 2007 Romania and Poland had the same position and Bulgaria the 18th position, ie a lower level than

the other two countries. Romania is the only country of the three, which registered a worsening situation during the time under review. The highest ranking was held by Poland which was ranked 17 in 2007 and 15 in 2012. In 2007, Romania was best positioned according to the indicator "Investment by institutional sectors", ahead of the other two states. In 2012 "The dispersion of GDP acquis" the indicator that Romania had the best situation, although Bulgaria was ranked two in 2007 and one in 2012.

"Household saving rate" is a measure that both our country and Bulgaria occupied places in the last part of the league in both years, Romania occupies the last position, and Bulgaria, position number 24. The situation of Poland is a little better, but it got worse because it fell three places in the rankings from 17th position in 2007 to 20 in 2012. The unemployment rate is an indicator where Romania and Poland have seen a worsening of the situation in 2012 compared to the first year of analysis. If in 2007, Romania ranked eight, in 2012 ranked 16, and Poland 3rd position in 2007 and 13th in 2012, while the situation in Bulgaria has improved, climbing 6 places in the rankings to 16-10.

The second theme to be analysed is "Sustainable production and consumption" In this case, Romania is situated as the worst of the three countries analyzed, ranked 20 in 2007 and 19 in 2012. The best situation was registered both in Bulgaria 2007 and 2012, and the highest increase from one year to the other analysis. Thus, if in 2007 ranked 17 in 2012 ranked 14, while Romania has climbed from 20 to 19, and Poland from 19-17.

In Romania, the biggest increase is in the licensing of eco-labeling, which climbed 10 places in the ranking done and "Rate Monitoring" which has climbed 4 positions. It is noted increasing emission of nitrogen oxides and worsening situation regarding waste generation and treatment types.

As Poland is concerned, the biggest improvement, is to the indicator "per capita consumption of food" where it advanced ten positions. Also, we see a reduction in waste generation except major mineral waste, where in 2012 dealing in ranking of seven positions ahead, thus worsening the situation, there is an 11th place and just two indicators have changed their stance analysis the previous year with a place.

For Bulgaria, the highest growth indicator registers "Rate Monitoring" followed by "per capita consumption of food." The only indicator where Bulgaria registered a worsening of the situation in 2012 than in 2007 is "the area of Eco agriculture".

Both Romania and Bulgaria, occupied 2nd place in 2007 in terms of the generation of hazardous waste, while in 2012 it maintained the same position Bulgaria and Romania ranked 3rd, Poland occupied the places 23 and 24.

Following this analysis, we find that once again our country ranks last of the three in terms of "social inclusion". Romania's situation has improved considerably since the first year of the analysis, moving up one position, and the situation has improved noticeably, Poland, occupying position 14 in 2012 up to 16 in 2007, while Bulgaria's position remains unchanged (the 23rd place). Of the three countries, Poland occupies the best position, Bulgaria and Romania having places in the last part of the ranking.

For Poland there is a decrease in the number of people in poverty with low labor intensity, but also there is an improvement in the gap of paying by gender.. "The level of secondary education by age" is the indicator for which Poland experienced a worsening of the situation last year of the analysis..

For Bulgaria we see an improvement indicator "people living in poverty with poor labor intensity," which ranked from 21 in 2012 to 26 in 2007.

It should be noted that our country occupies the last position in many of the indicators analyzed, and the substantial improvement that Romania and Poland have recorded the indicator "people living in poverty with low intensity work", advancing in the rankings in 2012 against 2007 with 21 seats and 16 seats.

In the ranking of "demographic changes" we see that there are not considerable differences between the three countries. Thus, in 2007, both Romania and Poland had position 17, while Bulgaria ranked 18. In 2012, Romania and Bulgaria's situation has improved by one place, and Poland with three positions. Romania is well positioned in terms of "employment rate for older people" occupying position 7 in both years of analysis, while Poland ranked 27th and Bulgaria at 16th.

In 2007, Poland and Bulgaria held the positions 17 and 18, and in the second year of analysis to the positions 14 and 17. We observe an improvement for Poland, which has climbed three places and a sensible evolution of the situation of Bulgaria. In

2012, Poland has made the best progress in the indicator "average of life expectancy to 65" .For Bulgaria, the most important development is the reduction of the risk of poverty among young people.

After analyzing the indicators that form the theme of 'public health' we notice that Romania has a worrying situation, with 25th place in 2012 with 9 places lower than Poland and 13 than Bulgaria. The health system in Romania still consists of inefficient health problems. Romanian current healthcare model focuses mainly on curative care instead of ambulatory or the hospital and primary care.

About half of the population lives in rural areas where there are no hospitals and often no medical centers, leading to major problems in terms of access to basic health services. In addition to this reality, the medical system in Romania continues to be underfunded and funds are often inappropriately used. According to the specialists in the healthcare system, in Romania there are no benefit-cost tests that would lead to an efficient allocation of resources [6]. Following this analysis, we find substantial worsening of situation of our country in terms of "Life expectancy at birth" and "healthy life years and life expectancy at 65 years".

Poland's situation has improved in 2012, it changes position from 12 to 19 in the first year of analysis. And Bulgaria has climbed three places in the ranking on that theme. For Poland we see consistent improvements in several indicators, and here we refer to the "Life expectancy at birth" which has climbed 18 places in the range of analysis and "healthy life years and life expectancy at 65 years" for which there is an increase of 19 positions."

Concerning Bulgaria, we can say that it had a growth of seven units for the indicator "Healthy life years and life expectancy at age 65". Regarding the indicators "Unmet demand for medical consultations and treatments" and "The share of people living in sound polluted households", the country stagnated. Even if Bulgaria had a decrease of one place in 2012, it is remarkable that it is still in the first part of the ranking.

"Power and climate changes" is the first topic analyzed by Eurostat and for which Romania occupies a ranking place in front of the other two countries that were

analyzed. The position held by our country in this case is a good one and it stagnated during the two years, occupying the 13th place both in 2012 and in 2007.

The other indicators analyzed did not record substantial changes. It is remarkable that our country had a leading position for the indicator showing Emissions of greenhouse gases. In the last two years, Romania not only reached, but also exceeded the target of an 8% decrease for emissions of greenhouse gases, established by the Kyoto protocol. This substantial decrease for emission of greenhouse gases is more the result of the local industry's decline, after 1989, than it is of the economic agents concern. By exceeding the level established by the Kyoto protocol, Romania has earned a transmission right, available to the government, that can be sold and the money obtained can be used in environmental projects [7].

Both Bulgaria and Poland had received the 16th place, in 2007 regarding "Power and climate changes". The best ranking for Poland was the 5th place for "Energy dependence", and the worst was 24th for "Electricity from renewable sources". We find a significant increase for using renewable sources of energy in 2012 compared to 2007, when Poland has climbed nine places, but overall, Poland's situations remained the same for the two years of analysis.

After this analysis we find a slight improvement for Bulgaria regarding the indicators results, the country climbing just one place. The most important change was for the indicator "Thermal energy and combined energy", for which it climbed nine places.

The next topic subject to analysis is "Sustainable transport". In this case our country is ranked similar to Bulgaria, which improved ranking by one place in 2012. Concerning Poland we don't find any improvement, but a slight decrease in 2012 when it received 20th place compared to 2007 when it was ranked 19th. Bulgaria hasn't seen any decrease nor a remarkable increase, as in 2012 it was ranked 15th and in 2007 16th.

The sustainable transport is another topic for which Romania stagnated, being ranked 16th in the two years of analysis. Nevertheless, there are a few indicators for which we've seen more consistent changes and those are "Passenger transport", "Freight transport", "CO₂ Emissions per km generated by new cars".

Poland has a serious situation regarding “The relative power consumption for transport”, because in 2007 it was ranked 28th, and in 2012 27th. Also, Poland hasn’t improved the situation regarding “Freight transport volume, share of GDP”, “Passenger transport volume, share of GDP”, “CO₂ emissions per km generated by new cars”.

Bulgaria has improved “The energy consumption depending on the ways of transport”, climbing nine places in 2012 compared to 2007, but the situation got worse regarding the indicators “The relative power consumption for transport”, “Freight transport volume, share of GDP”, “CO₂ emissions per km generated by new cars”.

Regarding “Natural resources” in 2012 both Romania and Poland had the same place, and Bulgaria was ranked 16th, which is two places below. Romania’s position for the indicator “Water resources exploitation index” is worth mentioning, as it gained 5th place compared to the 18th and 23rd place for other two countries.

We find for Romania an improvement for connecting the people to drinkable water and exploiting water resources. In 2012 the amount of drinkable water distributed to Romanian people was 1035429 thousand cm, 13067 thousands more than in 2011, from which 67% is household water. The length of the sewerage network was 24789,8 km, from which 19600,7 km in urban areas and 1140,3 km in rural areas. 44,2% of the Romania people were connected to the sewerage network in 2012, which is a 93 799 people increase compared to 2011 [8].

Poland’s situation has improved, as it climbed three places in 2012 compared to 2007 when it was ranked 17th. Bulgaria’s situation also improved, as it occupies 16th place in 2012 compared to 2007 when it was 20th. We find that the most important increase both for Poland and Bulgaria is for the indicator “People connected to the drinkable water network”, with 13th and 14th place in the ranking made for this topic.

The new topic “Global relations” hasn’t seen any change in 2012 compared to 2007, as the situation is the same for all indicators. Romania’s position in 2012 and 2007 was 15th, Poland’s 18th, and Bulgaria’s 21st in 2007 and 22nd in 2012.

It is worth mentioning that for this topic there are many indicators for which analyzed countries do not report. We find that the situation is worse for the indicator that measures the CO₂ emissions per capita in EU and in developing countries for Poland and Bulgaria, Poland dropping five places compared to the first year of analysis, and

Bulgaria three. It is worth mentioning that our country has a leading position for this indicator, and the situation improved in 2012 compared to 2007.

“Good governance” is another topic subject to analyze which, at least for Poland hasn't recorded any improvement for the overall situation. Poland occupied the 20th place both in 2007 and 2012, and we witness a serious worsening for the indicator “New cases of violation of the law”, for which in 2007 it was ranked 16th, and in 2012 27th.

Regarding Bulgaria, the situation is more difficult because it dropped three places compared to 2007 when it was ranked 16th. We find an increase of new cases of violation of the law, as Bulgaria is 18 places away from the rank received in 2007 for the same indicator.

Both for Bulgaria and Poland we find an improvement of the situation for the confidentiality level in EU institutions. Bulgaria is ranked ten places ahead, and Poland four, in 2012 compared to 2007.

The indicator for “The transposition deficit” for which Romania has seen a certain improvement can be considered political coherence measure between EU and member countries. In 2007 the European Council adopted a target of 1%. The transposition deficit is a scoreboard indicator of EU internal market and is updated twice a year, in May and November. This ranking was made having as basis the data from November for every year that was analyzed.

The share of environmental and labor taxes in total tax revenues is another indicator that had a five places increase in 2012 compared to 2007. The environmental taxes are defined as taxes whose tax base is a physical unit that has a proven negative impact on the environment. There are four types of environmental taxes collected as tax revenue: energy taxes (contributing around three quarters of total), transport taxes (approximately one fifth of the total) and pollution and resource taxes (approximately 4%). The labor taxes are generally defined as all income taxes, payroll taxes and social contributions of employees and employers that are levied on income from work.

4. Conclusions

After the analysis made we find that both in 2007 and in 2010, Romania occupied the lowest position from the three countries that were analyzed. Also, the differences between the three countries are of only one place and all the three countries are

situated in the second part of the ranking. In 2012, the three countries climbed one position and in the last year of analysis Romania held 18th place, Poland 17th, and Bulgaria 16th. (Table 1).

Table 1 Romania, Poland and Bulgaria's position-sustainable development indicators 2007 and 2012

Indicators	Romani a 2007	Romani a 2012	Polan d 2007	Polan d 2012	Bulgari a 2007	Bulgaria 2012
1 Economic and social development	17	20	16	16	14	14
2 Sustainable consumption and production	20	19	19	17	17	14
3 Social inclusion	25	24	16	14	23	23
4 Demographic changes	17	16	17	14	18	17
5 Public health	22	25	19	16	12	13
6 Energy and climate changes	13	13	16	16	16	17
7 Sustainable transport	16	16	19	20	16	15
8 Natural resources	18	14	17	14	20	16
9 Global relations	15	15	18	18	21	22
10 Good governance	22	18	20	20	16	19

AVERAGE POSITION	19	18	18	17	17	16
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Source: Data processed by Eurostat

Romania is the best positioned for the indicators “Energy and climate changes” for which it exceeded the other two countries with three, respectively four positions and “Global relations” where it holds three positions ahead of Poland and seven ahead of Bulgaria. Public health is the most problematic topic for our country, as the situation got worse in 2012 compared to 2007 and the indicator showing Social inclusion is also painful. Romania’s best situation is for “Energy and climate changes”, where it is ranked 13th and we had an improvement in the second year of analysis for “Natural resources” and “good governance”.

Poland has ten spots on the list in front of Romania and nine ahead of Bulgaria regarding “Social inclusion”, and for “Demographic changes” it has two, respectively three spots ahead of the other two countries subject to the analysis. It is best ranked for the topics “Social inclusion”, “Demographic changes” and “Natural resources”, and the lowest rank is for “Sustainable transport” and “Good governance”. We find that Poland has climbed a few positions in the ranking in 2012 compared to 2007 for the topics “Demographic changes”, “Public health” and “Natural resources”.

Bulgaria is ranked higher than Romania and Poland for the indicators “Social and economic development”, “Sustainable consumption and production”, “Public health”. This country climbed at “Sustainable consumption and production” and “Good governance” three places in 2012 and four places at “Natural resources”. Also for the indicators “Sustainable transport” and “Demographic changes” Bulgaria had slightly increased with one position. Regarding “Energy and climate changes”, “Public health” and “Global relations” while regarding “Good governance” Bulgaria dropped three places.

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