

PROGRESS IN SUSTAINABLE DEVELOPMENT IN THE EU COUNTRIES IN THE YEARS 2004-2011

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Abstract (AJ)

The history of shaping up of the idea of the sustainable development, which came into existence in 1968 at the UNESCO International Conference of Scientific Experts. The indicators of the sustainable development which are to serve monitoring whether the sustainable development takes place in agreement with the planned actions of the United Nations presented in the Agenda 21 document.

EUROSTAT data concerning growth of the indicators of the sustainable development of the European Union member countries was used in the analysis.

INTRODUCTION

In Poland, the notion of sustainable development was defined in the Environment Protection Act of April 27, 2001. The sustainable development is such a social and economic kind of development in which the process of integrating political, economic and social actions with maintaining natural balance and stability of the basic natural processes in order to guarantee a possibility of satisfying basic needs of present and future individual communities or their members (www.dolceta.eu).

The purpose of the paper is presentation of an analysis and assessment of changes in the sustainable development with the use of measuring instruments. Eurostat data concerning the sustainable development has been used in this paper.

1 SHAPING EQUILIBRIUM DEVELOPMENT

During the International Conference of Scientific Experts sponsored by UNESCO in 1968, which was devoted to mutual relations between environment and development, a new concept of sustainable development started to be formed and the international interdisciplinary programme on “man and biosphere” (MAB) was created.

The post-conference report expressed the most important facts showing that there is a growing danger of an ecological catastrophe on the Earth due to degradation of the natural environment, as well as of possible social and economic catastrophe.

The conference in Stockholm in 1972 was devoted to the issues connected with natural environments. It was at this conference that the term “sustainable development” was used for the first time. Eventually, the definition of equilibrium development (eco-development) was formulated during the 2nd UNEP (United Nations Environment Programme) session in 1975.

In 1987, there was a Report of the UN World Commission for Environment and Development, which was entitled “Our Common Future” and was prepared by the commission headed by G. H. Brundtland. The report developed selected aspects of the Sustainable Development and specific principles of its development.

The document stressed the necessity of integrating global actions in three basic areas (Raport, 1991):

- Economic growth and even distribution of benefits in order to achieve an appropriate long term growth, which should be shared by all nations and communities.
- Protection of the natural resources and the environment by developing solutions which will limit consumption of the natural resources and stop the pollution of environment.
- Social development; international community should make all the possible efforts to satisfy the needs of all people in terms of employment, food, education, energy, health care, water and sanitary systems. At the same time, everything must be done to maintain the cultural wealth and its diversity.

A major international event was organised by the UN in Rio de Janeiro from June 3 until June 14, 1992. It was called the Earth Summit. It was focused on environment and development issues. The result of the Conference was a document, Rio Declaration, signed by ministers of the majority of world countries. The idea of sustainable development is defined very precisely in the 27 principles contained in the Declaration of the Conference (ekologia.pl).

The principles are development of the three principles of the sustainable development: *economic*, *social* and *ecological development*. There was also one of the most important documents, called Agenda 21, created during the Earth Summit (ekologia.pl). The document contains the action agenda for the United Nations, multilateral organizations and individual governments in every area in which man can influence the environment in the 21st century. Poland and the other 171 countries signed the Agenda (ekologia.pl).

The document also contains recommendations concerning changes in conduct in the future. The target defined in the Agenda 21 is a safe and just world in which every living creature will be able to maintain his/her/its dignity.

Eight years later, in 2000, there was the Millennium Summit of the United Nations Organisation held, in which the Millennium Development Targets were defined. They have been expected to be implemented by 2015.

The most important targets defined in the documents are:

- elimination of Hunger and extreme poverty (cutting the number of population whose daily income does not exceed 1 dollar),
- providing the poor with access to primary education,
- promoting equal opportunities for men and women (elimination of unequal access of genders to all levels of education by 2015),
- reduction of the mortality rate of children under 5 years of age by 2/3,
- reduction of the mortality rate of mothers by 3/4,
- control spreading of diseases, such a HIV infection, malaria and other diseases,
- applying methods hampering excessive consumption of natural resources,
- reducing the number of population without access to drinking water by half, improving living conditions of 100 million inhabitants of slum settlements,
- creating global partnership in favour of development.

Following publication of the 2011 UN report, it is obvious that some of the targets shall certainly not be implemented by 2015 and some will be implemented only partially.

Another World Summit on Sustainable Development was held in Johannesburg in 2002. The conference was attended by 22000 participants from 100 countries. The Summit was devoted

to problems with drinking water all over the world, but other issues were also discussed. A decision was taken of 5.2% reduction of emission of greenhouse effect gases to atmosphere by 2012. There were attempts at checking the degrees of implementation of commitments time. The Johannesburg Declaration concerning sustainable development was published at the end of the conference. The declaration formulated challenges facing mankind as well as obligations as to prevent them. Implementation of actions connected with the obligations were to be monitored.

The result of the latter obligation is developing a system of sustainable development indicators (SDI) meant to monitor the progress of the sustainable development and identify areas requiring special care.

The next Summit took place in Rio de Janeiro “Rio+20” in June 2012. The most important tasks set during the Summit were:

- to convert economies to a more green models, bearing in mind eradication of poverty in various areas of the world,
- to prevent oceans against excessive exploitation, destruction of underwater ecosystems and results of climate changes,
- to form more friendly and more effectively functioning urban organisms, i.e. for example, by creating fast and effective public transport systems,
- to extend usage of renewable energy sources, which allow economic growth while reducing carbon dioxide and pollution.

During the „Rio +20” Summit, an obligation was assumed concerning development of sustainable transport. At the same time, development of the sustainable transport was supported by a number of large international banking institutions. A document was assumed during the Summit (Future We Want), which stated that the most important goal is improvement of material situation of the people most often threatened with poverty. The “Future We Want” document emphasized the equality of gender equality, the importance of strengthening position of women and guaranteeing them equal opportunities for development. A law was legislated, giving all the citizens the right to healthy food and nutritional security, which can be achieved due to sustainable farming systems and ecological economy. The undertaken two years earlier, at the Millennium Summit and it turned out that the developmental targets have no chance of being implemented within the assumed period of documents emphasizes the need for correct approach to the issues connected with the sustainable development taking into account mutual relations between the three fields of life: social, economical and environmental. A decision was taken to define Universal Sustainable Development Goals after 2015, closely related to the state of implementation of the Millennium Development Goals.

2 SUSTAINABLE DEVELOPMENT INDICATORS

On the basis of the recommendations contained in the UN document, the global action programme – Agenda 21 passed at the conference in Rio de Janeiro in 1992, there was a set of 130 indicators developed by the United Nations Commission for Sustainable Development (UNCSD) concerning processes affecting exerting influence on the formation of the sustainable development (Eurostat). The indicators form the so called level 3 of sustainable development (SDI). The indicators of the level 3 were then divided into 10 thematic groups. Each theme contained a number of emphasized sub-topics. Indicators that belonged to

individual sub-topics were collected together and formed level 2 indicators. Then, as a result of collecting Level 2 indicators the Headline Indicators are obtained for thematic groups (indicators of Level 1). A list of thematic areas and leading indicators in each group are presented in Table 1. The Table also shows notations of the indicators and units in which they are expressed.

Table 1. Thematic areas and the headline indicators

No of the thematic group	Title of the thematic group	Headline Indicators	Title of an indicator	Applied unit
1	Socio-Economic Dimensions	Growth rate of real GDP per capita	SDI 1	%
2	Sustained Consumption and Production	Resource productivity indicator	SDI 2	EUR/kg
3	Social Inclusion	People at-risk-of-poverty or social exclusion	SDI 3	%
4	Demographic changes	Employment rate of older workers	SDI 4	%
5	Public Health	Healthy life years males, Healthy life years females, Life expectancy at birth males, Life expectancy at birth females	SDI 5	years
6	Changes of Climate and Energy	Greenhouse gas emissions, Share of renewable energy in gross final energy consumption, Primary energy consumption	SDI 6	%
7	Sustainable transport	Energy consumption of transport relative to GDP	SDI 7	%
8	Natural Resources	Common bird index GDP ;Fish catches taken from stocks outside safe biological limits: Status of fish stocks managed by the EU in the North-East Atlantic	SDI 8	%
9	Global partnership	Official development assistance as share of gross national income GDP	SDI 9	%
10	Good management	No Headline Indicator		

Source: my own study based on (Eurostat)

The SDI indicators have been developed mainly in order to monitor achievements of the Sustainable Development.

3 THE METHOD AND SCOPE OF STUDY

Indicators of the sustainable development that allow assessment and monitoring of the changes have been taken into account in the analysis. The following available measuring instruments were used for evaluation of the sustainable development.

- Growth rate of real GDP per capita, SDI 1
- Resource productivity SDI 2
- People at-risk-of-poverty or social exclusion SDI 3
- Employment rate of older Workers SDI 4
- Healthy life years males SDI 5A
- Healthy life years females SDI 5B
- Life expectancy at birth males SDI 5C
- Life expectancy at birth females SDI 5D
- Greenhouse gas emissions SDI 6A
- Share of renewable energy in gross final energy consumption SDI 6B
- Primary energy consumption SDI 6C
- Energy consumption of transport relative to GDP SDI 7
- Common bird index GDP SDI 8A1
- Fish catches taken from stocks outside safe biological limits: Status of fish stocks managed by the EU in the North-East Atlanti SDI 8B2
- Official development assistance as share of gross national income GDP SDI 9.

In order to measure numerous traits describing the studied European Union member country, indicators were compared and a matrix of correlation coefficients was created. Next, a horizontal analysis of traits describing the sustainable development in 27 EU member countries³ starting from 2004 was made. Measuring instruments showing the most favourable values of a trait were emphasized. The collected data was supplemented by descriptive analysis.

4 RESULTS OF ASSESSMENT OF CHANGES IN SUSTAINABLE DEVELOPMENT

Results of the sustainable development, described by means of headline indicators, are presented in the EU in Reports monitoring the sustainable development (Monitoring report of the EU, 2011, Zrównoważony rozwój, 2009, 2001).

Such reports were published earlier in 2005, 2007, 2009 and 2011.

Headline indicators are compared in these reports with the headline indicators published in the preceding report.

Table 2 shows results of the comparison (formulated verbally) of headline indicators of 2009 with the indicators of 2007 and of the 2011 indicators with the 2009 indicators.

¹ No data

² No data

Table 2. Comparison of indicators of the sustainable development

No of the thematic group	Title of the thematic group	Headline Indicators	Assessment of changes in the 2009 report when compared to the 2007 report	Assessment of changes in the 2011 report when compared to the 2009 report
1	Socio-economic dimensions	Growth rate of real GDP per capita	Positive changes	Moderately positive changes
2	Sustained consumption and production	Resource productivity indicator	Moderately negative changes	Moderately negative changes
3	Social inclusion	People at-risk-of-poverty or social exclusion	Positive changes	Positive changes
4	Demographic changes	Employment rate of older workers	Moderately positive changes	Moderately positive changes
5	Public health	Healthy life years males, Healthy life years females, Life expectancy at birth males, Life expectancy at birth females	Moderately positive changes	Moderately positive changes
6	Changes of climate and energy	Greenhouse gas emissions, Share of renewable energy in gross final energy consumption, Primary energy consumption	Positive changes	Positive changes
7	Sustainable transport	Energy consumption of transport relative to GDP	Moderately negative changes	Moderately negative changes
8	Natural resources	Common bird index GDP ;Fish catches taken from stocks outside safe biological limits: Status of fish stocks managed by the EU in the North-East Atlantic	Moderately negative changes	Moderately negative changes
9	Global partnership	Official development assistance as share of gross national income GDP	Definitely negative changes	Definitely negative changes
10	Good management	No Headline Indicator		

Source: my own study based on (Zrównoważony rozwój, 2009, 2001)

As appears from the comparison of results published in the report, there were only two themes, social inclusion and climate changes that displayed positive changes in the two successive periods. Whereas, definitely adverse changes took place in the theme concerning global partnership.

The values of 2011 indicators for individual countries were used for presentation of the correlation coefficient matrix.

Table 3. Assessed correlation matrix

Scale	SDI 1	SDI 2	SDI 3	SDI 4	SDI 5A	SDI 5B	SDI 5C	SDI 5D	SDI 6A	SDI 6B	SDI 6C	SDI 7	SDI 9
SDI 1	1,00	-0,44	0,23	0,20	-0,54	-0,29	-0,68	-0,54	-0,66	0,34	-0,08	0,04	-0,25
SDI 2		1,00	-0,51	0,05	0,62	0,44	0,73	0,63	0,42	-0,42	0,40	-0,38	0,67
SDI 3			1,00	-0,21	-0,21	0,01	-0,61	-0,61	-0,36	0,04	-0,18	0,03	-0,53
SDI 4				1,00	0,13	0,04	0,15	0,07	-0,2	0,46	0,14	-0,44	0,48
SDI 5A					1,00	0,86	0,66	0,49	0,54	-0,22	0,11	-0,50	0,56
SDI 5B						1,00	0,40	0,32	0,38	-0,22	0,08	-0,49	0,35
SDI 5C							1,00	0,87	0,72	-0,20	0,36	-0,35	0,58
SDI 5D								1,00	0,67	-0,07	0,42	0,30	0,45
SDI 6A									1,00	-0,27	-0,04	-0,16	0,18
SDI 6B										1,00	-0,19	0,10	0,09
SDI 6C											1,00	-0,34	0,13
SDI 7												1,00	-0,25
SDI 9													1,00

Source: my own study

Table 4. Changes in the sustainable development in 2011

Kraj	SDI 1	SDI 2	SDI 3	SDI 4	SDI 5A	SDI 5B	SDI 5C	SDI 5D	SDI 6A	SDI 6B	SDI 6C	SDI 7	SDI 9
	2004=100	2004=100	2004=100	2004=100	2004=100	2004=100	2004=100	2004=100	1990=100	2004=100	2004=100	2004=100	2004=100
Belgium	32,1	111,18	97,22	129,00	107,47	108,73	102,37	101,59	85,12	215,8	99,6	95,1	131,7
Bulgaria	60,3	117,65		137,23			102,46	102,10	60,45	150,0	102,7	92,7	
Czech Republic	42,6	132,69		111,71			103,17	102,53	68,42	156,7	95,3	88,1	109,1
Denmark	33,3	112,93	114,55	98,67	93,12	86,09	103,18	102,12	83,39	155,0	94,0	95,7	100,0
Germany	275,0	108,98		143,30			102,48	101,59	74,48	236,5	89,8	88,6	139,3
Estonia	141,8	120,00	87,83	109,16	108,40	107,62	107,21	104,36	51,81	140,8	110,9	92,5	220,0
Ireland	75,0	213,75	118,55	101,01	105,28	106,23	103,29	102,34	105,82	279,2	91,9	85,9	130,8
Greece	-175,0	133,01	100,32	100,00	103,91	102,14	101,83	102,83	109,61	163,4	90,3	100,8	93,8
Spain	-6,3	174,04	110,80	107,75	104,31	104,94	103,25	102,27	126,43	181,9	91,9	87,0	120,8
France	83,3	117,80	97,47	109,79	101,95	98,91	102,61	102,27	88,9	123,7	94,6	92,3	112,2
Italy	80,5	114,77	106,82	124,26	92,29		102,82	101,79	95,3	225,5	90,8	92,9	133,3
Cyprus	14,3	116,90		109,82		88,31	103,66	101,59	147,47	200,0	108,3	92,2	533,3
Latvia	74,0	103,23		105,43			104,57	103,68	44,67	100,9	95,3	105,1	116,7
Lithuania	98,8	114,29		106,58			102,87	102,06	44,31	117,3	67,4	94,7	325,0
Luxembourg	-13,3	130,49	104,35	129,28	110,59		103,29	101,46	100,22	322,2	97,9	88,2	122,8
Hungary	38,0	173,08		115,11		111,46	103,64	101,94	67,19	206,8	94,3	104,1	157,1
Malta	-144,4	121,15		100,95			101,55	102,22	151,27		122,2	91,3	138,9
Netherlands	26,3	105,86		124,12			103,25	101,96	94,67	238,9	95,2	91,9	102,7
Austria	131,6	115,32	96,57	144,10	102,57		102,49	102,07	107,57	135,5	102,9	88,4	117,4
Poland	83,3	93,02		140,84		100,00	102,83	102,40	87,56	148,6	111,2	112,7	160,0
Portugal	-110,0	115,66	88,73	95,23	109,57		103,07	102,44	116,49	129,0	91,7	92,5	49,2
Romania	28,4	84,00		108,40		112,02	103,80	103,58	50,46	125,9	90,4	93,4	
Slovenia	11,4	146,58		107,59			104,49	103,09	105,88	116,8	104,4	121,8	130,0
Slovakia	72,0	131,37		154,10			102,84	102,31	63,19	144,8	94,1	88,1	128,6
Finland	60,5	114,81	104,07	111,98	108,26		102,52	101,58	96,56	109,7	93,7	97,0	143,2
Sweden	57,9	103,23	95,27	104,20	114,68	109,79	101,91	101,21	86,03	120,9	94,1	93,3	130,8
United Kingdom	14,8	135,29		100,89		115,46	102,86	102,34	74,81	316,7	86,5	91,3	155,6

Source: my own study

The purpose of the used horizontal analysis (Table 4) is monitoring achievements in the field of the sustainable development.

The indicator of Growth rate of real GDP per capita (SDI 1) in the analysed European countries increased. The highest growth took place in Germany and Estonia. There is very evident negative dynamics of the Growth rate of real GDP per capita indicator in e.g. Greece, Spain and Romania.

Due to the economic crisis, there was growth of the Resource productivity indicator (SDI 2). There are significant differences among the EU member countries, however.

Positive changes could be observed concerning the indicator People at-risk-of-poverty or social exclusion (SDI 3).

There were clear positive changes connected with the decreasing number of adults with low level of education. Employment rate of older workers (SDI 4).

There was a significant, dynamic increase in the indicators of Healthy life years males (SDI 5A), Healthy life years females (SDI 5B), Life expectancy at birth males SDI 5C, Life expectancy at birth females (SDI 5D)

In the studied period, the indicator of Greenhouse gas emissions (SDI 6A) decreased. The general EU share of renewable energy in gross final energy consumption increased.

The general situation resulting from assessment of the indicator of Official development assistance as share of gross national income GDP (SDI 9) is rather positive.

CONCLUSIONS

International conferences devoted to issues of socio-economic development and natural environment brought everyone's attention to the existing threat to the world – the socio-economic catastrophe as well as ecological disaster.

The discussed analysis of the sustainable development in the EU countries was based on 13 measuring instruments only. Comparisons induce a number of general conclusions in these areas. The general goal assumes constant improvement of the quality of life of members of organised communities that manage the resources and use them effectively as well as make use of the economic potential connected with ecological and social innovations (Zrównoważony rozwój, 2009).

The evaluation of the goal must be carried out by means of assessment of the indicators, and in the years 2004 – 20011 it shows definite beneficial changes.

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