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# STRATEGIC PLANNING FOR SUSTAINABLE DEVELOPMENT OF STATES: ADMINISTRATION ASPECT

**Vitalii Ye. Dankevych**

Zhytomyr National Agroecological University, Zhytomyr, Ukraine

**Tetiana O. Kamenchuk**

South Ukrainian National Pedagogical University named after K. D. Ushynsky,  
Odesa, Ukraine

**Oleksandra Ye. Kononova**

Prydniprovsk State Academy of Civil Engineering and Architecture, Dnipro, Ukraine

**Iryna I. Nadtochii**

The Kherson Branch of the National University of Shipbuilding named after Admiral  
Makarov, Kherson, Ukraine

**Hanna M. Ohor**

Admiral Makarov National University of Shipbuilding, Kherson Branch, Kherson, Ukraine

## ABSTRACT

*The article examines the effectiveness of sustainable development management in the EU and Ukraine. Based on the analysis of indicators that reflect the status of achieving the goals and plans for sustainable development of the EU and Ukraine, for the period 2001-2019, modern trends in the economic, social, environmental and managerial components of sustainable development are identified. The results of the study point to several major trends and provide a new picture of the strategic planning of member states for sustainable development policies. It is worth highlighting the gradual approach of countries to the average level of achievement for all goals among the trends. An upward trend among EU countries is observed in achieving SDG 1, SDG 10. In general, the sustainable development goals cause certain difficulties or significant difficulties, and the main challenges for the EU countries are SDG 11-13. Ukraine mainly faces some or significant difficulties in achieving its sustainable development goals. No poverty and reduced inequalities achieved. There are still some challenges to overcome problems in the quality education, affordable and clean energy, climate action, partnerships for the goals. Ukraine faces significant challenges and challenges in achieving its zero hunger, gender equality, clean water and sanitation, decent work and economic growth, industry, innovation and infrastructure, sustainable*

*cities and communities, life on land. The most significant problems in Ukraine with the achievement of the goals of Good health and well-being, Life below water, Peace, justice and strong institutions.*

**Keywords:** Development, Strategic planning, Management, Environmental component, Economic component, Social component

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## 1. INTRODUCTION

Global problems that exist in each country have led to the need to combine efforts to form and implement a sustainable development policy [1]. At the same time, new challenges related to globalization, in particular, are hindering the implementation of development plans and programs:

- despite the expansion of trade, increased flows of capital, goods and services, the level of poverty in the world is not decreasing, but on the contrary, the gap between rich and poor is increasing;
- social, cultural, ethnic and other conflicts between countries that increase inequality;
- leadership for economic primacy between countries, the growth of public debt, which constrains economic growth, the instability of financial markets, which causes an economic recession, the re-crediting of the economy, which in the future may lead to a financial crisis;
- environmental problems are becoming widespread, constituting a direct threat to the development of society, and point-based, chaotic measures in the field of ecology through different socio-economic development of countries do not allow countries to align with the level of environmental development;
- demographic shifts, increasing migration flows associated with legal and economic inequality in the world, are growing at scale;
- global information space is constantly expanding, but in third world countries it still lags far behind in terms of development due to the low educational level [2].

Therefore, the main task today is to develop and integrate a sustainable development policy, which should be based on the concepts of partner management, digital management, and intersectoral interaction of all participants in the socio-economic system that affect the economic, social, environmental, and managerial processes in countries. Strategic planning based on effective management of sustainable development goals can provide solutions to a number of these problems [3, 4]. Assessment of sustainable development management is particularly relevant.

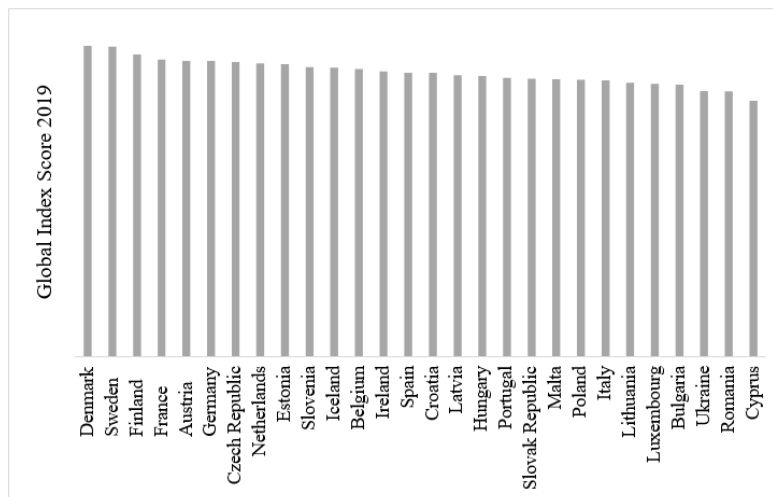
## 2. MATERIALS AND METHODS

The current trends of economic, social, environmental and managerial component of sustainable development have been determined on the basis of the analysis of indicators that characterize the state of achievement of the Sustainable Development Goals and form the rating of the EU and Ukraine countries according to the Sustainable Development Index for the period 2001-2019 [5].

Index Sustainable Development 2000-2018 data available for 28 EU Member States and Ukraine on the Internet was used to assess the achievement of sustainable development in EU and Ukraine from the source <https://github.com/>. The average values, deviations, asymmetry, excess, minimum and maximum values for the indicators, which reflect the state of achievement of the Sustainable Development Goals based on panel data, were calculated.

The results indicate a predominantly upward trend among EU countries in achieving the Goal 1 No poverty target, among 17 EU countries having achieved the target, Lithuania and Latvia are facing significant difficulties, 9 countries are still solving difficulties. Objective 2 Zero hunger for EU countries not reached: Nineteen countries have significant difficulties in this area, the biggest problem for 9 countries. Goal 3 Good health and well-being achieved in Sweden, Ireland, Italy and Luxembourg. For the Czech Republic, Estonia, Latvia, Hungary and Lithuania, goal 3 sets out the Significant challenges, for Ukraine it is Major challenges, for other EU countries goal 3 Challenges remain.

Among all EU countries, Finland has reached a target of 4, for 15 countries, including for Ukraine, a target of 4 causes some difficulties, for 10 of the EU countries a goal of 4 Quality education poses significant challenges, for Hungary and Slovak Republic – Major challenges (Figure 1).



**Figure 1** 2019 Global Index Score (0-100) [6]

Gender equality goal causes Significant challenges for 20 EU countries, including Ukraine, for Latvia causes major problems, for Iceland, Belgium, Luxembourg, Cyprus Challenges remain. Goal 6 Clean water and sanitation achieved causes significant difficulties in 11 EU countries and causes difficulties in 17 countries.

Affordable and clean energy goal reached 7 countries (Sweden, Finland, Slovenia, Iceland, Portugal, Bulgaria), 13 EU countries face some difficulties, 8 countries have significant difficulties, this is a major problem for Luxembourg. Objective 8 Decent work and economic growth for 18 countries poses some challenges, for 10 EU countries and Ukraine there are significant challenges. Goal 9 for 4 countries (Denmark, Sweden, France, Netherlands) causes some difficulties, for 15 countries and Ukraine in particular - significant difficulties, for 9 EU countries it is a major problem.

Reduced inequalities goal reached by 5 countries (Denmark, Finland, Iceland, Malta, Ukraine), 12 EU countries face some difficulties, 7 countries with significant achievement difficulties, for 4 countries this is a major problem (Latvia, Lithuania, Bulgaria, Romania).

Sustainable cities and communities goal for the 17 EU countries poses some difficulties to achieve, for 11 countries and Ukraine there are significant challenges. 12 Responsible consumption and production goal for 21 countries remains a major problem, for 7 countries and Ukraine in particular pose significant difficulties.

Climate action goal for Malta, Ukraine and Romania causes some difficulties, for 5 EU countries - significant, for 20 others - the main problems arise when it is reached. Goal 14 for Estonia and Croatia is challenging, for 7 countries it will pose significant challenges, for 14 countries and Ukraine it is one of the main challenges in achieving sustainable development [7]. Goal 15 Life on land achieved Hungary, Poland, Bulgaria, Romania, for 20 EU countries achieving it is a challenge, for Iceland, Malta, Luxembourg, Ukraine it is challenging. Goal 16 Peace, justice and strong institutions reached Denmark, Austria, Iceland, for 11 countries the achievement of the objective causes some difficulties, for 12 countries – significant difficulties, for Ukraine remains one of the problems of achieving sustainable development. Goal 17 Partnerships for the goals achieved by Croatia, for Denmark, Sweden, Bulgaria, Ukraine and Romania achievement causes some difficulties, for 14 EU countries significant difficulties, for 8 countries it remains the main challenge to achieve sustainable development [8]. Overall, the analysis of the EU and Ukraine's achievement of sustainable development indicates that within the EU there are problems in the social, environmental and economic components of sustainable development, and most countries face some difficulties in achieving it [9, 10].

The analysis of the Sustainable Development Index of Ukraine allows us to identify the following trends: no poverty and reduced inequalities; there remain some challenges to addressing the quality education, affordable and clean energy, climate action, partnerships for the goals [11]. Ukraine faces significant challenges and challenges in achieving its zero hunger, gender equality, clean water and sanitation, decent work and economic growth, industry, innovation and infrastructure, sustainable cities and communities, life on land [12, 13]. The most significant problems in Ukraine in achieving the goals of Good health and well-being, Life below water, Peace, justice and strong institutions [14, 15].

### 3. RESULTS AND DISCUSSION

Index Sustainable Development 2000-2018 data available for 28 EU Member States and Ukraine on the Internet were used to evaluate the achievement of sustainable development in EU countries. Mean values, deviations, asymmetry, excess, minimum and maximum values for sustainable development goals based on panel data are calculated (Figure 2).

Table 1 shows the indicators that characterize the social component of achieving the sustainable development of the EU and Ukraine for 2001-2018 (Goal 1 – No poverty (sdg\_01), Goal 2 – Zero hunger (sdg\_02), Goal 3 – Good health and well-being (sdg\_03), Goal 4 - Quality education (sdg\_04), Goal 5 - Gender equality (sdg\_05), Goal 6 – Clean water and sanitation (sdg\_06), Goal 7 - Affordable and clean energy (sdg\_07).

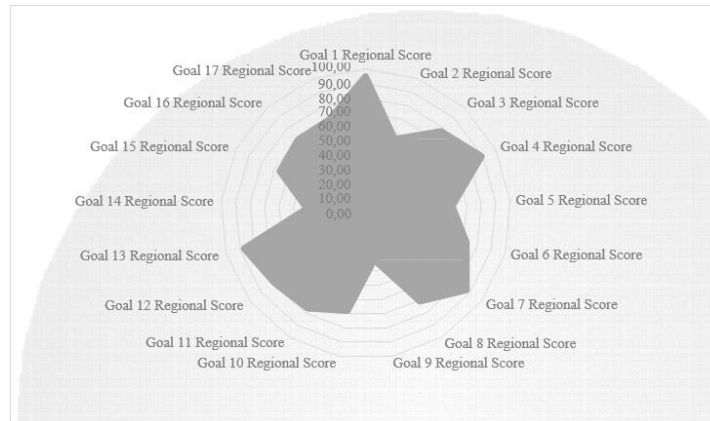


Figure 2 Ukraine Index Sustainable Development 2019 [6]

Table 1 The social component of achieving sustainable development\*

|                | No. | Minimum | Maximum  | Average value  | Standard deviations | Asymmetry | Excess  |
|----------------|-----|---------|----------|----------------|---------------------|-----------|---------|
| sdg1_wpc       | 289 | 0,0000  | 6,0100   | 0,5006         | 0,6056              | 4,3343    | 31,7059 |
| sdg1_320pov    | 289 | 0,0100  | 13,4000  | 0,9064         | 1,3040              | 5,2984    | 42,3184 |
| sdg1_oecdpo    | 171 | 4,5000  | 18,3000  | <b>10,3064</b> | <b>3,2190</b>       | 0,3862    | -0,8529 |
| sdg2_undersh   | 261 | 2,5000  | 5,8000   | 2,7046         | 0,6200              | 3,3062    | 10,3659 |
| sdg2_stunthme  | 522 | 1,0300  | 21,7800  | <b>5,5801</b>  | <b>4,2209</b>       | 1,2939    | 1,3181  |
| sdg2_wasteihme | 522 | 0,5130  | 6,6910   | 1,7685         | 1,1459              | 1,3947    | 2,1553  |
| sdg2_obesity   | 493 | 13,0000 | 28,9000  | <b>19,8152</b> | <b>2,9102</b>       | 0,3445    | -0,1194 |
| sdg2_cryld     | 252 | 0,1763  | 9,8422   | <b>5,0924</b>  | <b>1,8062</b>       | 0,4203    | -0,0806 |
| sdg2_trophic   | 174 | 2,2939  | 2,5741   | 2,4104         | 0,0598              | 0,7666    | 0,5048  |
| sdg3_matmort   | 464 | 3,0000  | 51,0000  | <b>10,3190</b> | <b>7,4589</b>       | 2,0682    | 5,0867  |
| sdg3_neonat    | 522 | 1,0000  | 11,0000  | 3,2025         | 1,6476              | 1,9608    | 4,7264  |
| sdg3_u5mort    | 522 | 2,1000  | 21,9000  | 5,8282         | 3,2591              | 2,1194    | 5,2471  |
| sdg3_tb        | 522 | 2,0000  | 157,0000 | <b>24,0885</b> | <b>30,4684</b>      | 2,2745    | 4,8051  |
| sdg3_hiv       | 200 | 0,0100  | 0,3600   | 0,0730         | 0,0722              | 2,2322    | 4,8749  |
| sdg3_ncds      | 116 | 9,1000  | 35,6000  | <b>15,6621</b> | <b>5,7680</b>       | 1,0008    | 0,1323  |
| sdg3_traffic   | 116 | 2,5000  | 28,8000  | 10,1259        | 5,1981              | 1,1012    | 1,5505  |
| sdg3_lifec     | 493 | 66,9000 | 83,1000  | <b>77,8041</b> | <b>3,6101</b>       | -0,8194   | -0,1358 |
| sdg3_fertility | 493 | 4,0840  | 44,1120  | 14,4166        | 9,2082              | 1,5118    | 1,9916  |
| sdg3_births    | 346 | 94,4000 | 100,0000 | <b>99,2301</b> | <b>0,8425</b>       | -2,0906   | 6,4942  |
| sdg3_vac       | 290 | 19,0000 | 99,0000  | <b>92,3000</b> | <b>9,7400</b>       | -4,9522   | 30,3658 |
| sdg3_uhc       | 522 | 70,5610 | 95,6120  | <b>86,5485</b> | <b>6,3093</b>       | -0,5920   | -0,8725 |
| sdg3_swab      | 333 | 3,6003  | 8,0189   | 6,2566         | 0,9426              | -0,3062   | -0,6571 |
| sdg3_incomereg | 299 | 0,0000  | 48,9000  | <b>21,1234</b> | <b>8,2991</b>       | 0,5864    | 0,3482  |
| sdg3_smoke     | 139 | 9,4000  | 40,0000  | <b>20,3230</b> | <b>4,9562</b>       | 0,5587    | 2,3260  |
| sdg4_primary   | 360 | 85,8170 | 99,8592  | <b>95,9335</b> | <b>3,1966</b>       | -1,1319   | 0,6212  |
| sdg4_second    | 311 | 42,5677 | 116,2964 | <b>93,7118</b> | <b>11,3030</b>      | -2,3625   | 6,7534  |
| sdg4_tertiary  | 298 | 14,2313 | 55,6260  | 36,1787        | 8,7818              | -0,4183   | -0,4082 |
| sdg5_fplmodel  | 468 | 41,8000 | 92,0000  | 73,6600        | 11,4603             | -0,6717   | -0,1645 |
| sdg5_edat      | 290 | 78,6667 | 107,9208 | <b>97,3568</b> | <b>4,5105</b>       | -0,4773   | 1,6990  |
| sdg5_lfpr      | 551 | 40,8876 | 90,9977  | 77,3375        | 8,0850              | -1,4585   | 3,8467  |

|                | No. | Minimum | Maximum  | Average value  | Standard deviations | Asymmetry | Excess  |
|----------------|-----|---------|----------|----------------|---------------------|-----------|---------|
| sdg5_parl      | 545 | 5,3000  | 47,6000  | 23,8945        | 10,8074             | 0,3390    | -1,0493 |
| sdg5_paygap    | 139 | 1,0000  | 28,3000  | <b>13,0432</b> | <b>5,1528</b>       | 0,0089    | -0,1450 |
| sdg6_water     | 459 | 90,0455 | 100,0000 | 99,2713        | 1,4365              | -3,2313   | 13,1649 |
| sdg6_sanita    | 452 | 81,4974 | 100,0000 | 96,7644        | 4,5084              | -1,8313   | 2,2999  |
| sdg6_safewat   | 363 | 52,3003 | 99,9999  | 92,8582        | 8,7554              | -2,4389   | 6,7761  |
| sdg6_safesan   | 362 | 35,8344 | 97,4562  | 81,4756        | 14,0007             | -0,7572   | -0,2797 |
| sdg7_elecac    | 493 | 99,3779 | 100,0000 | <b>99,9921</b> | <b>0,0586</b>       | -8,3719   | 72,6620 |
| sdg7_cleanfuel | 493 | 64,5000 | 100,0000 | <b>96,4313</b> | <b>6,4246</b>       | -2,2863   | 5,7012  |
| sdg7_co2twh    | 232 | 0,1075  | 11,5824  | 1,3944         | 1,1014              | 5,1706    | 37,7230 |
| sdg7_ren       | 184 | 3,6597  | 77,3447  | 21,1515        | 16,4932             | 1,7064    | 3,0735  |

**Source:** calculated by the author

In terms of poverty, the EU average has reached its target, with a poverty rate averaging 0.5% (sdg1\_wpc), a poverty headcount ratio at \$ 3.20 / day averaging 0.91% of the population. Poverty rate after taxes and transfers, poverty line 50% averaged 10.31% of the population, which can be considered as a barrier to achieving goal 1 in some EU countries.

Goal 2 - Zero Hunger Achievements Prevent Obesity Challenges (sdg2\_obesity average equal to 19,8152), Low Childhood Delay Rate (sdg2\_stuntihme average equal 5.5801). In this case, the standard deviation indicates significant differences between EU countries in these indicators. Grain yields also remain one of the objectives of Goal 2, and the value of the indicator differs slightly within the EU (standard deviation 1,8062).

Within the framework of Goal 2 - Zero hunger, it is advisable to consider the development of the agricultural sector and the indicators that indicate the development of agriculture (Table 2).

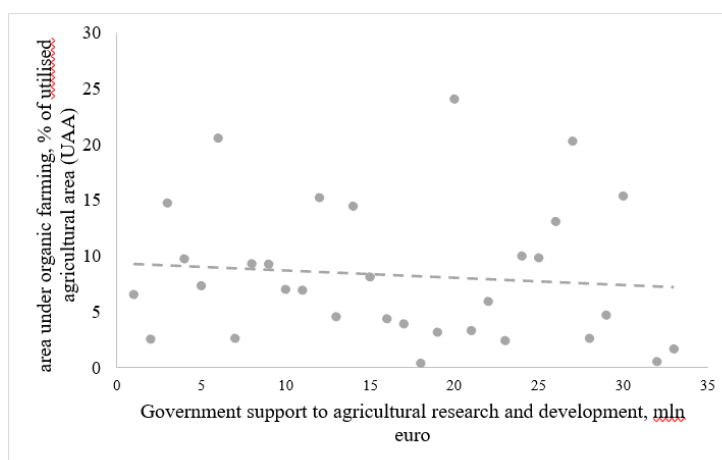
**Table 2** Dynamics of agricultural development indicators within Goal 2-Zero hunger in EU countries in 2015-2018

| Indicator  | 2016     | 2017     | 2018     |
|--|----------|----------|----------|
| Agricultural factor income per annual work unit (AWU)<br>(source: Eurostat, DG AGRI) | 111,96   | 125,56   | 120,88   |
| Government support to agricultural research and development, Million euro            | 3128,714 | 3193,913 | 3242,468 |
| Area under organic farming, % of utilized agricultural area (UAA)                    | 6,68     | 7,03     | 7,5      |
| Gross nutrient balance on agricultural land by nutrient, kg per hectare              | 55,9     | 57,9     | -        |
| Ammonia emissions from agriculture (source: EEA), tons                               | 3622865  | 3635852  | -        |
| Nitrate in groundwater (source: EEA), mg NO <sub>3</sub> per liter                   | 19,6     | 19,1     | -        |

The data points to the growth of labor productivity in the EU countries in the agricultural sector, as well as the level of state support to agricultural producers. The share of agricultural land under organic production in the total area of agricultural land in the EU countries is also on average increasing, indicating the development of organic production. For example, the share was 14.76% in the Czech Republic in 2018, in Estonia - 20.57, in Italy - 15.24, in Latvia - 14.47%, in Austria - 24.08%, in Sweden - 20, 29%, in Switzerland - 15,39%.

It should be noted that there is no obvious link between the amount of state support (Figure 3) and the share of land under organic production. For example, the figures were 261.693

million euros and 15.39% in Norway, in Italy - 297.752 million euros and 15.24%, in the UK as opposed to 414.273 million euros and 2.64%, in Austria 38.483 million euros and 24.08%, in Estonia EUR 5.4 million and 20.57%.



**Figure 3** Dependence of Area under organic farming,% of utilized agricultural area from Government Support for Agricultural Research and Development, 2018

In EU countries, the challenge of reducing ammonia emissions in agricultural land and nitrates in groundwater still remains a challenge, with Gross nutrient balance on agricultural land by nutrient also increasing in 2015-2018.

The State Statistics Committee presents other indicators of achievement of sustainable development within Goal 2 - Zero hunger, which allow to evaluate the development of the agricultural sector.

Labor productivity in agriculture is growing at a steady pace. In 2018, the goal set for 2020 for this indicator was achieved. The index of agricultural products and the index of food production are characterized by stable growth. The share of food industry products and processing of agricultural raw materials in the export of groups 1-24 of Ukrainian classification of foreign economic activity goods remains stable. The share of agricultural land under organic production in the total area of agricultural land is extremely small in comparison with the EU countries, although the area of land in Ukraine as a whole significantly exceeds the area of land in some EU countries. At the same time, the Consumer Price Index for food is growing at a steadily rapid pace throughout the year. Overall, the situation with Goal 2 - Zero hunger is worse than in EU countries.

Goal 3 - Good health and well-being (sdg\_03) was achieved by providing maternal mortality reductions (mean 10.3190 per 100,000 live births), high TB incidence (high 24.0885 per 100,000 population) deviations within the EU 30,4684), reducing the death rate from cardiovascular disease, cancer, diabetes and chronic respiratory disease in the 30-70 age group (EU average 15.6621 per 100,000 low- deficiency population 5.7680), increasing birth rates due to high qualification of medical staff (EU average of 99.23% with practically zero deviation of 0.8425%), an increase in the percentage of surviving infants who received 2 WHO-recommended vaccines (average 92.30% with a deviation of 9.74% within the EU). The gaping issues remain the gap in self-reported health by income (0-100), which averages only 21.12 with a high variance of 8,299 within the EU, and a daily smokers average of 20.32% population age 15+ with a deviation of 4.95% in EU countries.

The achievement of Goal 4 - Quality education is ensured by the high value of the Net primary enrolment rate (%) and the Lower secondary completion rate (%) with a low level of

deviation within the EU. As for Population age 25-34 with tertiary education (%), the average of 36.1787 is still an obstacle for the EU countries to ensure the quality of education.

Achievements of Goal 5 - Gender equality (sdg\_05) in the EU countries cause some difficulties because of the average Demand for family planning satisfied by modern methods, which averages 73.66% women married or in unions, ages 15-49; a high Ratio of female to male mean years of schooling population 25 and above, averaging 97.3568 with a deviation of 4.5105%; Ratio of female to male labor force participation rate averages 77.3375% female to male ratio with a deviation of 8.0850%; Seats held by women in national parliaments averaged 23.8945% with a deviation of 10.8074%; Gender wage gap as a whole was 13.0432% male median wage with a deviation of 5.1528%.

Overall, we can talk about the achievement of Goal 6 - Clean water and sanitation (sdg\_06), with an average of over 92, some difficulties occur in some countries with a slight deviation from the average values that characterize the achievement of Goal 6 in EU countries.

Goal 7 - Affordable and clean energy (sdg\_07) achievement is achieved by addressing energy challenges to public access to electricity (99,2713% on average), high access to clean fuels & technology for cooking (96,4313% population average), low CO2 emissions from fuel combustion / electricity output averaging 1.3944 MtCO2 / TWh with a deviation of 1.1014 MtCO2 / TWh within the EU. The challenge for EU countries remains the development of alternative energy sources.

Table 3 shows the indicators of the economic component of achieving the Sustainable Development Goals. Some obstacles arise when reaching Goal 8 - Decent work and economic growth (sdg\_08) due to unemployment of 8,6919% with a deviation of 4,3788%, employment of the population, high proportion of young people who do not work, do not study (average 13,9763%).

**Table 3** Economic component of achieving sustainable development

|                 | No. | Minimum | Maximum  | Average value  | Standard deviations | Asymmetry | Excess  |
|-----------------|-----|---------|----------|----------------|---------------------|-----------|---------|
| sdg8_accounts   | 84  | 41,2686 | 100,0000 | 87,3706        | 13,8485             | -1,4555   | 1,6985  |
| sdg8_unemp      | 551 | 1,8000  | 27,4700  | 8,6919         | 4,3788              | 1,4198    | 2,4487  |
| sdg8_empop      | 299 | 48,8000 | 86,5250  | 66,1816        | 6,8956              | 0,3252    | 0,1610  |
| sdg8_yneet      | 291 | 4,6420  | 28,4693  | 13,9763        | 4,9783              | 0,6463    | 0,2010  |
| sdg9_intuse     | 522 | 0,7162  | 98,2600  | 57,7194        | 25,1813             | -0,4276   | -0,8168 |
| sdg9_mobuse     | 271 | 1,9177  | 154,1217 | 57,6026        | 33,4123             | 0,4119    | -0,1808 |
| sdg9_lpi        | 140 | 2,2213  | 4,4394   | 3,4297         | 0,5395              | -0,0088   | -0,9552 |
| sdg9_articles   | 406 | 0,1121  | 2,4757   | 0,9993         | 0,5330              | 0,3190    | -0,5842 |
| sdg9_rdex       | 481 | 0,2225  | 3,9138   | 1,4373         | 0,8856              | 0,7762    | -0,4385 |
| sdg9_rdres      | 256 | 3,3667  | 16,6781  | 7,9986         | 3,1971              | 0,9303    | 0,2352  |
| sdg9_patents    | 184 | 0,0631  | 90,4978  | 23,2392        | 24,2607             | 0,6952    | -0,9539 |
| sdg9_netacc     | 255 | -3,6276 | 77,5074  | 41,1710        | 18,8172             | -0,3367   | -0,8705 |
| sdg10_adjgini   | 279 | 24,0072 | 47,5055  | 35,0751        | 5,7053              | 0,3186    | -1,1257 |
| sdg10_palma     | 213 | 0,7700  | 1,7800   | 1,1086         | 0,2195              | 0,5845    | -0,4202 |
| sdg10_elder     | 213 | 1,8000  | 43,2000  | 10,3404        | 6,7478              | 1,7024    | 4,2646  |
| sdg11_pm25      | 522 | 5,8610  | 27,1770  | <b>15,2722</b> | <b>5,0612</b>       | 0,0323    | -0,7852 |
| sdg11_pipedwat  | 446 | 83,4505 | 100,0000 | 98,3225        | 2,9289              | -2,4616   | 6,2771  |
| sdg11_transport | 333 | 35,4444 | 82,2578  | <b>59,6973</b> | <b>7,9624</b>       | -0,1472   | 0,6326  |

**Source:** calculated by the author



Goal 9 - Industry, Innovation and Infrastructure (sdg\_09) Goal Completion is a challenge due to under-utilization of the Internet (Population using the internet is 57.7194% with high rejection rate 24,1813%), medium level of development of logistical relations, overall low level of scientific potential of EU countries (sdg9\_articles average 0,99 with deviation 0,53), low level of research and development expenditure of EU countries (% GDP) in the average is 1,4373% with a deviation of 0,8856%). It is worth noting the high level of participation of women in the field of engineering and science (an average of 41,1710% with a deviation of 18,8172%).

Achieving Goal 10 - Reduced inequalities (sdg\_10) is hindered by the high income gap across the population, while in some countries the old-age poverty rate remains high (averaging 10,3404% with a deviation of 6,7478%).

EU countries need challenges to meet the Goal 11 goal – Sustainable cities and communities (sdg\_11), which involves overcoming problems in the field of drainage and satisfaction with public transport.

The challenge concerning Sustainable production and consumption is the main challenge for all EU countries. There is no proper indicator to measure the effectiveness of SDG 12. The question if the legal measures which are adopted on the basis of this challenge can be Ecolabel Regulation, Ecodesign Directive, Energy Labelling Directive [16].

Table 4 shows the indicators of the environmental component of achieving sustainable development.

**Table 4** Environmental component of sustainable development

|                  | No. | Minimum | Maximum | Average value | Standard | Asymmetry | Excess  |
|------------------|-----|---------|---------|---------------|----------|-----------|---------|
| sdg13_co2pc      | 290 | 3,1645  | 22,1182 | 7,1991        | 3,2610   | 1,9566    | 4,9873  |
| sdg14_cpma       | 264 | 11,0160 | 99,6042 | 71,8461       | 24,3878  | -0,8265   | -0,2188 |
| sdg14_cleanwat   | 168 | 27,8100 | 87,6300 | 53,7880       | 12,1608  | 0,1598    | 0,4722  |
| sdg14_fishstocks | 228 | 0,9300  | 93,2400 | 42,2659       | 25,7762  | -0,0484   | -1,2146 |
| sdg14_trawl      | 343 | 4,2080  | 99,9494 | 64,0430       | 26,4274  | -0,3405   | -1,1507 |
| sdg15_cpma       | 319 | 15,3818 | 99,4035 | 75,3826       | 20,4121  | -1,4429   | 1,6841  |
| sdg15_cpfa       | 513 | 0,0000  | 99,9630 | 69,5629       | 25,9665  | -0,8168   | -0,4248 |
| sdg15_redlist    | 348 | 0,8448  | 0,9929  | 0,9392        | 0,0462   | -0,6123   | -0,8739 |

**Source:** calculated by the author

One of the main obstacles to achieving sustainable development is the lack of action, as evidenced by the Goal 13 - Climate action indicator (sdg\_13): on average in EU countries Energy-related CO2 emissions per capita were 7,1991 tCO2 / capita with a deviation of 3.2610.

Achieving Goal 14 - Life below water (sdg\_14) is fraught with a number of challenges: insufficient protection of marine areas requiring security measures, pollution of reservoirs, reduction of fish stocks. Similar trends are being observed in the achievement of Goal 15 - Life on land (sdg\_15), namely the lack of biodiversity conservation measures.

Government measures to improve the environmental situation, in particular to stimulate the development of renewable energy sources, have a positive impact on economic growth. There is strong synergy effect between renewable electricity prices, SDG 7 (affordable and clean energy) and SDG 8 (decent work and economic growth) [17]. SDG 12 (responsible production and consumption) accounts for most of the future renewable electricity price variation (excluding self-effect), whereas future variation in SDG 7 (affordable and clean energy) and SDG 13 (climate action) are explained mostly by SDG 8 and SDG 12, respectively [17].

Table 5 shows the indicators of the managerial component of achieving sustainable development.

**Table 5** Management component of achieving sustainable development

|                 | No. | Minimum | Maximum  | Average value  | Standard       | Asymmetry | Excess |
|-----------------|-----|---------|----------|----------------|----------------|-----------|--------|
| sdg16_homicides | 482 | 0,0000  | 11,1236  | 2,0086         | 2,1172         | 2,5627    | 6,1182 |
| sdg16_detain    | 242 | 0,0361  | 0,5076   | 0,2078         | 0,0939         | 0,6915    | 0,4646 |
| sdg16_safe      | 331 | 28,6513 | 90,4266  | <b>66,7456</b> | <b>12,3433</b> | -0,5942   | 0,1698 |
| sdg16_cpi       | 203 | 25,0000 | 92,0000  | <b>63,0197</b> | <b>15,9193</b> | -0,0565   | -      |
| sdg16_rsf       | 145 | 6,4000  | 39,1000  | 18,7316        | 7,7606         | 0,4595    | -      |
| sdg16_prison    | 308 | 37,2555 | 361,1902 | 133,2208       | 73,7204        | 1,1330    | 0,5589 |
| sdg17_govex     | 213 | 6,5366  | 15,2220  | 10,6702        | 2,1309         | 0,1137    | -      |
| sdg17_oda       | 414 | 0,0080  | 1,4045   | 0,3464         | 0,2853         | 1,1185    | 0,2856 |
| sdg17_govrev    | 52  | 22,4397 | 37,4937  | 31,5590        | 3,2662         | -0,3544   | 0,1502 |

**Source:** calculated by the author

To achieve goals of Goal 16 – Peace, justice and strong institutions (sdg\_16), the main challenges are the lack of security, the high level of corruption in EU countries, with significant variance within the EU (on average Corruption Perception Index (0-100) 63,0197 and the deviation was 15,9193), the press freedom is insufficient (an average of 18,7316 with a deviation of 7,7606 within the EU).

Goal provision of Goal 17 – Partnerships for the goals (sdg\_17) is related to challenges such as government spending on education and health, government revenue without grants, international concessional public finance, including official development assistance (% GNI).

#### 4. CONCLUSION

The results of the study indicate that the EU and Ukraine's sustainable development management is not sufficiently effective. Based on the analysis of indicators reflecting the state of achievement of the goals and plans of sustainable development of the EU and Ukraine, for the period 2001-2019 the current trends of the economic, social, environmental and managerial component of sustainable development have been determined.

The survey findings highlight several major trends and provide a new picture of Member States' strategic planning for sustainable development policies. Trends include a gradual approximation of countries to average achievement across all targets. The upward trend among EU countries is observed in the achievement of SDG 1, SDG 10. Overall, the Sustainable Development goals are subject to some difficulties or significant difficulties, and the main challenges for EU countries are SDG 11-13.

Ukraine mainly faces some or significant difficulties in achieving its sustainable development goals. No poverty targets and inequalities reduced achieved. There remain some challenges to addressing the quality education, affordable and clean energy, climate action, building Partnerships for the goals of sustainable development goals. Ukraine faces significant problems and challenges in meeting its security goals zero hunger, gender equality, Clean water and sanitation, decent work and economic growth, industry, innovation and infrastructure, sustainable cities and communities, life on land. The most significant problems in Ukraine are achieving goals of Good health and well-being, Life below water, Peace, justice and strong institutions.

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