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Infographics Project III:

The European Path towards a Sustainable Future



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“The European Path towards a Sustainable Future”

Infographics Project III – Sustainable Development Goals

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The Sustainable Development Goals of Agenda 2030

Introduction

The achievement of sustainable development is a major priority for the European community and is linked to the effort of ensuring the immediate needs of modern generations, without, however, compromising the coverage of the corresponding needs of the subsequent generations^{1, 2}. The promotion of sustainable development is in the centre of the European Union's (EU's) political interest and legislative procedures. On the occasion of the oil crisis of 1973, the EU took over action and adopted the first of the many that will follow, Action Plan for the Environment. For the first time, the environmental factor was legally guaranteed in the Single European Act (1987) while ten years later, in the Treaty of Amsterdam (1997)³, this notion ceases to be strictly environmental, and it acquires a socio-economic meaning. Since then, the EU has explicitly expressed its commitment to ensuring sustainability in the European area by promoting programs of action, directions, rich agenda, secondary law and soft law. The main sign of the EU's commitment to achieving the goal of sustainable development is the incorporation of the notion of 'sustainability' into its founding Treaties, i.e. the Treaties for the E.U. and for the Function of the EU. Specifically, as early as in the preamble of the Treaty for E.U. is highlighted the essential contribution of sustainable development to the promotion of the social and financial progress of the Europeans, while other Articles of the Treaty refer to sustainability as one of the most fundamental EU objectives in the EU. In fact, in article 11, which has general validity, it is highlighted the importance of linking the various policies pursued in this field, and the need to integrate environmental policies during the shaping of other European actions. Moreover, the EU, also, wants to promote the "extroversion" of its various actions regarding the environment and sustainable development and is concerned about their impact on its international relations.

The SARS-CoV-2 pandemic has brought to the fore the public debate on the actions that need to be taken, not only to address its negative consequences, but to comply with and promote the Sustainable Development Goals. The global sanitary developments have paralysed the European Union, slowing down or even suspending measures to comply with sustainable development policies, increasing the poverty and unemployment rates and highlighting major issues such as unequal opportunities in access to health care services and the fact that the lower-income segments of the population are more vulnerable towards the SARS-CoV-2⁴.

Some positive effects of the pandemic on some fields, such as the consumption and the use of Renewable Energy Sources, seem temporary. However, the pandemic has contributed to the highlight of the necessity for further immediate activation in the environmental, social and economic pillar of the European sustainability policy thus acting as an incentive for the redefinition of the direction and the intensity of policies on this issue.

The present research initially aims to highlight the main international but also European actions adopted towards the strengthening of sustainable development and the mitigation of the negative effects of climate change. Also, the course of the EU member states as well as the

¹ [A Guide ESG - the new megatrend | Get Involved & Velos Advisory.](#)

² This definition was first introduced by the World Commission on Development and Environment, known as the Brundtland Committee in 1987.

³ That Treaty states that: "The Community has as its task, by creating a common market, an economic and monetary union and through the implementation of the common policies or actions referred to Articles 3 and 3A, to promote the harmonious and balanced development of economic activities throughout the Community, a stable and lasting, non-inflationary growth respecting the environment, a high degree of convergence of economic performance, a high level of employment and social protection, raising the standard of living, and quality of life, economic and social cohesion and solidarity between Member States."

⁴ [Sustainable development in the European Union: Monitoring Report on progress towards the SDGs in an ESG context, Eurostat, 2021](#)

course of the EU as a whole is examined in the most important subsections and individual indicators of the 17 Sustainable Development Goals, as reflected in the "2030 Agenda". For the purposes of this analysis, these goals have been categorized into three pillars, namely environmental, social and economic, without excluding the inclusion of some of these objectives in more than one pillar. At the same time, an overview of Greece's position towards all listed sub-indices and its course in the three pillars of sustainability is presented, as compared with the course of the EU in the corresponding data. The analysis finishes with a brief reference to the conclusions drawn from the study of these data.

The EU's "response" to climate change

The EU's first response to climate change is placed in the oil crisis of 1973. Since then, the European Commission has issued not only numerous Green Papers but also Agendas with proposed actions. One of the most important projects of the EU are the Action Plans for the Environment, which began in 1973. These are programmes which define environmental objectives to be achieved within a certain time horizon. Today, the Eighth Environment Action Programme is published, which serves as a guide for environmental policy making up to 2030.

The path to a sustainable future has been the subject of notable international legislative and political actions. One of the milestones for sustainable development recommends the 'Agenda of 2030 for Sustainable Development', adopted in September of 2015 by all members of the United Nations (UN). Specifically, the members of the UN agreed to the adoption of 17 common goals, which must be achieved by 2030, to defend peace and development for the whole of humanity and the planet. These 17 objectives are known as Sustainable Development Goals [SDGs], are divided into 169 sub-sections and 231 individual indicators which act as means of evaluating their progress⁵. All countries, economically developed and developing, have a shared responsibility for achieving them. The above objectives can be divided into 3 pillars, the Environmental, the Social and Economic. The 2030 Agenda promotes the inclusion of all three dimensions of sustainable development in all sectoral policies, while promoting the interconnection and coherence of the political and legislative frameworks that are relevant to the Sustainable Development Goals (SDGs).

Moreover, Goal 17 [Partnerships for the Goals] highlights the need for cooperation between governments, supranational organizations and the private sector to promote certain common goals. For achieving these goals, priority has been given to those countries that are furthest away from these objectives. Finally, the promotion of the Agenda has already significantly influenced the decision-making processes in many societies and economies, as the goals are designed in such a way as to highlight the position and importance of each stakeholder group, whether they are governments, supranational organizations, or businesses⁶.

In the same year (2015), another ambitious agreement, the "Paris Agreement", was adopted, which is the most important global agreement under the Agreement UN Framework on Climate Change. The main objective is to maintain the world temperature "well below" 2°C, and as close to 1.5°C, by pre-industrial level temperature. The "Paris Agreement" binds all states to reduce their emissions in order to contribute to the climate mitigation and climate adaptation efforts of economic developing Member states. An innovation of the agreement is the provision

⁵ For further information on the Sustainable Development Goals, please click [here](#).

⁶ [A Guide ESG - the new megatrend | Get Involved & Velos Advisory](#)

for financial assistance from developed to the most vulnerable countries, to achieve this goal. The Agreement was signed by the vast majority of UN members, already on the first day, i.e. 22 April 2016, a symbolic day in which the Earth is celebrated. By 2021, the EU and 196 states had signed the agreement⁷. The EU was one of the first to sign the agreement, declaring with this move its own commitment to be the first climate neutral society and economy by 2050. The formal ratification of agreement⁸ by the EU was scheduled for the very next day (October 5, 2016) after the fulfilment of the conditions for the entry into force of the agreement, i.e. ratification by at least 55 countries representing at least 55% of global greenhouse gas emissions.

The above political commitment of the EU to become the first climate-neutral economy and society until 2050, was adopted with the "European Green Deal", which was presented in December 2019 and was launched on 14 July 2021. The Agreement includes a series of measures aimed at developing an action plan for the circular economy, the protection and enhancement of the natural wealth of the EU, the innovation and investment, the insurance of the health and well-being of citizens and their protection from the effects of climate change. At the same time, a spirit of justice prevails through the exclusion of all kinds of inequalities. It is also a landmark agreement, as it recognizes the correlation but also the importance of all aspects of the ESG (Environment, Society and Governance). As part of the European Green Deal, it was even issued in July 2021 the 'Fit for 55' package of measures to reduce emissions by 55% by 2030 compared to 1990 levels. At the same time, Parliament adopted the EU climate law (European Climate Law), transforming the political commitment of the European Green Deal for a climate-neutral EU by 2050, into a legal obligation.

As mentioned above, the 17 Sustainable Development Goals that have been incorporated in the "Agenda of 2030" are based on the three pillars of sustainability, namely the environmental, the social and the economic one. In this article, then, reference will be made to the individual objectives based on the pillars to which they belong, and both the course of the EU and its Member States will be highlighted, with special reference to the corresponding position of Greece. It is important to emphasize that the survey carried out is based on data obtained from Eurostat⁹ and nowhere expresses the personal opinion of the authors or of the organization of 'Get Involved' on the progress of the European countries in the Sustainable Development Goals.

⁷ The departure of the US, the second largest producer of greenhouse gases, from the Agreement of 2019, during Trump's term and its reintegration a few years later during the term of Biden is an important historical fact worldwide.

⁸ Few countries have signed but not ratified the agreement, such as Turkey, Iraq, Eritrea.

⁹ The data used in the whole research are derived from the Eurostat theme "Sustainable Development Goals - Overview". So as to read it, please click [here](#).

How close, is the EU, in achieving a Sustainable Development society and economy? Documenting its progress in achieving the 17 SDGs

Environmental pillar

In the 2030 Agenda, we categorize seven (7) of the 17 goals related to the environmental pillar for achieving sustainability. Specifically, the objectives of the environmental sector concern: Clean Water and Sanitation [SDG 6], Affordable and Clean Energy [SDG 7], Sustainable Cities and Communities [SDG 11], Responsible Consumption and Production [SDG 12], Climate Action [SDG 13], Life Below Water [SDG 14] and Life on Land [SDG 15]. The analysis of the above general objectives will be based on percentages that the EU and Member States presented in specific sub-indices and their individual indices.

Initially, the general goal of "Clean Water and Sanitation" [SDG 6] is highlighted through the indicator of a population that has neither a bath, nor a shower, nor an internal toilet in their home due to poverty. In 2019, Greece, in this index, had a percentage of 0.20%. In the total of the EU, of the 27 member states, for 2019, the percentage was found at 1.60%, with a range from 0% in Germany and Sweden, to 22.4% recorded in Romania. Regarding the general objective "Affordable and Clean Energy" [SDG 7], the indicator for the share of renewable energy sources in the gross final energy consumption per sector (%) is presented. In 2019, in Greece, the share of renewable energy sources in the gross final energy consumption per sector was 19.68%. The total corresponding percentage of the EU of the 27 Member States for 2019 was 19.73%, thus ranking Greece as the 15th Member State, with the largest share of renewable energy sources. It is noteworthy that the largest percentage was presented by Sweden with 56.39%, while the lowest percentage was in Luxembourg with 7.05%.

Diagram 1: Energy consumption that derives from Renewable Energy Sources [RES] to total energy consumption

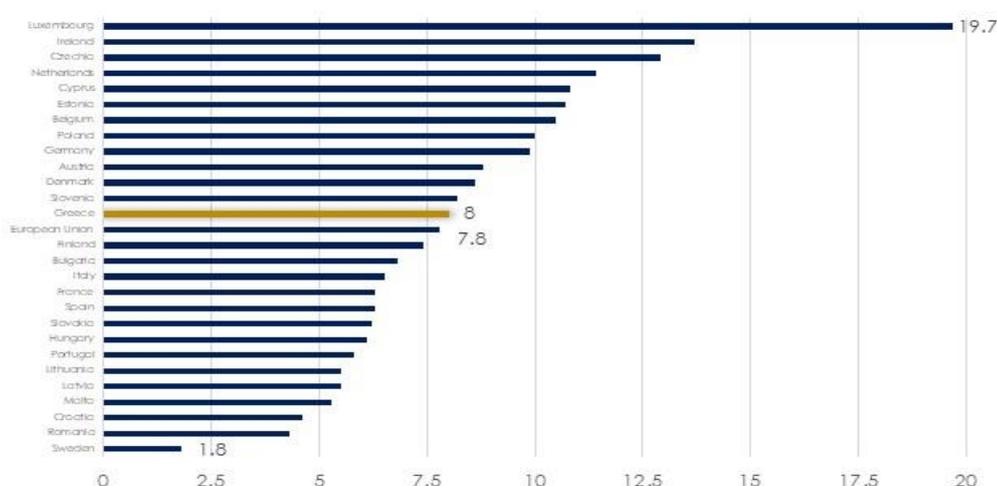


In terms of the Sustainable Cities and Communities Target [SDG 11], emphasis was placed on sub-indicators for municipal waste recycling rate and average CO₂ emissions per kilometre from new passenger cars [SDG 12]. In the first sub-index, in Greece, in 2019, the municipal waste recycling rate was 21%, much lower than 47.7% of the total EU. The EU Member State with the highest percentage was Germany with 66.7%, while the Member State with the lowest

percentage was Malta with 8.9%. In the index that concerns the average CO₂ emissions per kilometre from new passenger cars, in 2019, in Greece it was 115.6 g/km. Also in 2019, the EU of the 27 Member States had an average of 122.2 g/km. In the same year, Bulgaria was the country with the most emissions in the examined index with 137.6 g/km, while the Netherlands was the country with the lowest emissions per kilometre of new passenger vehicles with 98.4 g/km.

The "Climate Action" target [SDG 13] is highlighted through the per capita greenhouse gas emissions index. In this indicator, in Greece in 2019, per capita greenhouse gas emissions were recorded at 8 tons, ranking it as the 13th most polluting country among the other EU Member States. Respectively, in the EU as a whole [of 27] in 2019 they were estimated at 7.8 tonnes, ranging from 1.8 tonnes in Sweden to 19.7 tonnes in Luxembourg. It is worth mentioning the fact that the largest decrease in per capita greenhouse gas emissions was presented by Germany, as the emission of such gases during the period 2015 - 2019 decreased by 10.81%. For all EU countries and for Greece per capita greenhouse gas emissions decreased by 4.88% and 8.05%, respectively, between 2015 and 2019.

Diagram 2: Per capita greenhouse gas emissions – 2019



In addition, in the individual index for the degree of soil waterproofing, which represents the general objective "Life on Land" [SDG 15], the percentage of Greece in 2018, was 1.03% increased by 9.57% since 2016. In the EU as a whole, in 2018, the percentage in this index was 1.76%. In the same year, this index ranged from 0.41% in Latvia to 17.08% in Malta.

Finally, regarding the goal "Life Below Water" [SGD 14], in 2019, the percentage in the index of swimming areas with excellent water quality in Greece was 95.77%. The corresponding percentage, for the countries of the EU that have coastlines¹⁰, was 88.6%. From the EU Member States where they have coastlines, Greece recorded the 6th highest percentage in this index. In fact, the index, in all EU countries shows small fluctuations from 2015 to 2019.

¹⁰ The nations of Czech Republic, Hungary, Luxembourg, Austria, and Slovakia do not have coastlines.

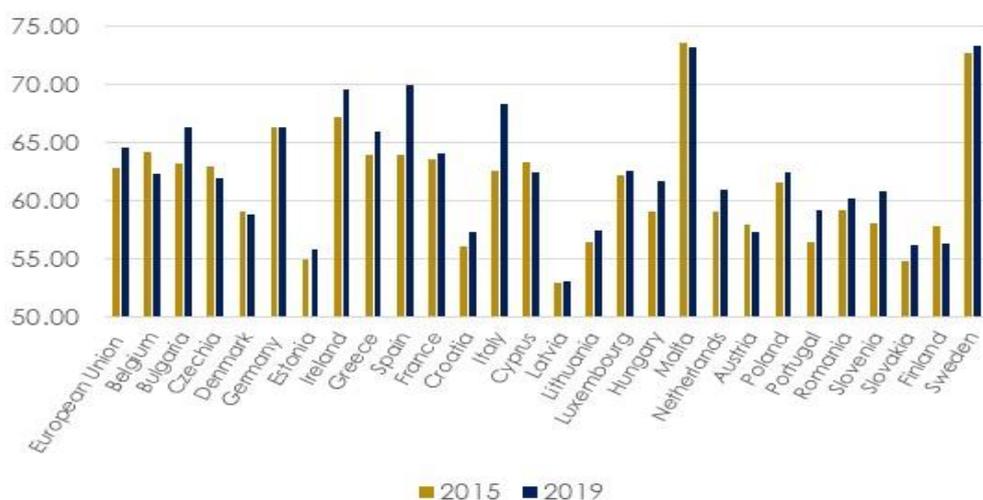
Social pillar

In addition to the environmental pillar, we categorized seven (7) of the 17 goals of sustainable development related to the social axis of the effort to achieve sustainability. Specifically, the goals of No Poverty [SDG 1], Zero Hunger [SDG 2], Good Health and Well-Being [SDG 3], Quality Education [SDG 4], Gender Equality [SDG 5], Reduced Inequalities [SDG 10] and Peace, Justice and Strong Institutions [SDG 16] reflect the emphasis placed on social progress as an important factor for sustainable development. The analysis on the above general objectives will be based on the percentages that the EU and its Member States noted in their specific sub-indicators.

Regarding the first goal of No Poverty, and, in fact, the sub-index on the percentage of workers (either employed or self-employed) who are close to the poverty line, it is worth noting that Greece for 2019 was ranked 6th the highest position in the EU, with a percentage of 10.2%, marking progress from the corresponding percentage in 2016. The best position in this index for the same year was recorded by Finland, which had the lowest percentage of workers at risk from poverty (2.9%) while, on the other hand, Romania, with 15.7%, was ranked highest in terms of the risk of its total workers being placed in a situation of lack of basic living goods. As a whole, the EU recorded a percentage of 9.2% in the corresponding index.

Regarding the goal of Good Health and Well-Being, emphasis was placed on the subcategory of life expectancy of citizens in the EU. and in the individual Member States. Specifically, Greece in 2019 had the eighth highest life expectancy in the Union, slightly above the European average, a percentage that, of course, decreased from 2015 when it was in 6th place. Of the other European countries, Malta and Sweden topped the life expectancy of their citizens, while Cyprus and Estonia remained at the bottom of the list.

Diagram 3: Life expectancy of citizens in the European Union [2015 vs 2019]



On the issue of education in the EU and especially in the cognitive training in the subjects of mathematics, reading and natural sciences, the high ranking of Greece, in 2018, in terms of cognitive deficiency in these subjects is remarkable. Specifically, in mathematics a cognitive deficiency of 35.8% was recorded, in reading the level of poor performance rose to 30.8% and in the positive sciences a corresponding percentage of 31.7% was recorded. First in the cognitive deficit for the same year were Bulgaria in terms of natural sciences and reading and Romania in terms of mathematics.

Regarding the funding that Greece provides for agricultural research and development, in 2019 it was the twelfth (12th) country in the EU with the largest contribution to this index, while in relation to 2018, it has the highest growth in this type of financing. The largest funding in this category over time is provided by Germany with its corresponding percentage reaching 30.44%, while second in this funding was ranked Spain, but a significant distance from Germany (15.27%).

Another important social indicator, which can contribute to the strengthening of the social character of sustainable development is that of Gender Equality, which was examined through the indicator that highlights the proportion of women on the Boards of Directors of Listed Companies. Greece in this index in 2020 recorded a percentage of 13% and, thus, was the Member State with the 6th lowest percentage of women in senior management positions compared to other EU Member States. Greece was at a much lower level and from the European average, which was recorded at 29.5%, with France (45.1%) having the best position and Estonia having the lowest (8.8%). Worth mentioning is the progress of Slovakia by 147.25%, from 12.7% to 31.4% in this index, during the period 2015-2020, ranked 10th from the 20th place it held in 2015 in the respective ranking.

Diagram 4: Proportion of women on the Boards of Directors of Listed Companies – 2020



The tenth target for reducing inequalities is considered through the individual indicator that describes the growth rate of household expenditure or the per capita income of the bottom 40% of the population. Greece for 2019 in this index was ranked in the 18th lowest position with a percentage of 20.7%, having recorded the highest growth rate since 2015 [10.7%]. In contrast, Luxembourg recorded the largest decrease in this index since 2015, recording a negative rate of change [-8.93%]. The EU as a whole recorded a rate of 21.4%, with the lowest rate being recorded in Bulgaria at 16.4%, and the highest in Slovakia at 25.1%, which, as we have seen, has made significant progress in the relevant indicators to reduce any kind of inequality.

In conclusion, an important social factor in each country is the degree of efficiency and smooth operation of its various institutions, including the courts. Thus, the funding that European countries provide to strengthen their judiciary and justice systems is interesting. Greece spent 669 million euros for this funding in 2019, with its related expenditures being for the same year 1.49% of the total EU expenditures, while the EU itself has spent a total of around € 45 billion, an increase of 14% since 2015, reach about 13.5 billion euros.

Economic pillar

Finally, in the economic pillar, we categorized the three (3) remaining sustainable development goals. More specifically, the economic pillar is captured through the Decent Work and Economic Growth [SDG 8], Industry, Innovation, and Infrastructure [SDG 9] and Partnerships for the Goals [SDG 17]. The goal of decent work and economic growth has been evaluated as the most important in Greece in both surveys conducted by Get Involved entitled Sustainable Literacy and Perspectives, in 2020¹¹ and 2021¹² with a sample of young Greek students and graduates of all levels, aged between 18 and 29. These goals will be analyzed through their individual indicators at EU level and its Member States.

Starting with Goal 8 for Decent Work and Economic Growth, and, more specifically, with the individual index "Young people out of employment, education or training", aged 15 to 29, it is worth mentioning that Greece, in 2020, recorded 18.7% of young people out of employment, education or training, being the 2nd country with the highest percentage in this indicator in the Union. Nevertheless, Greece has recorded a significant decrease of 22.4% from the levels of 2015, which was found at 24.1%. At the same time, in overall 13.7% of young citizens of the European Union were out of education, employment or training, with the corresponding percentage for women being 15.4%, while for men, 12.2%. Of the EU member states, Italy was the country with the highest percentage of young people out of employment, education or training, with 23.3%.

In the individual index of Gross Domestic Product [GDP], which is also part of Goal 8, Greece in 2020 was the country with the 8th lowest real GDP per capita in the Union, at € 16,300. The European average for the same period was € 26,370, significantly lower than in 2019. Due to the effects of the SARS-Cov-2 pandemic, which started to spread at the beginning of 2020, all EU countries recorded a decline in their real GDP per capita compared to 2019, with the sole exception of Ireland, which recorded an increase of 5%

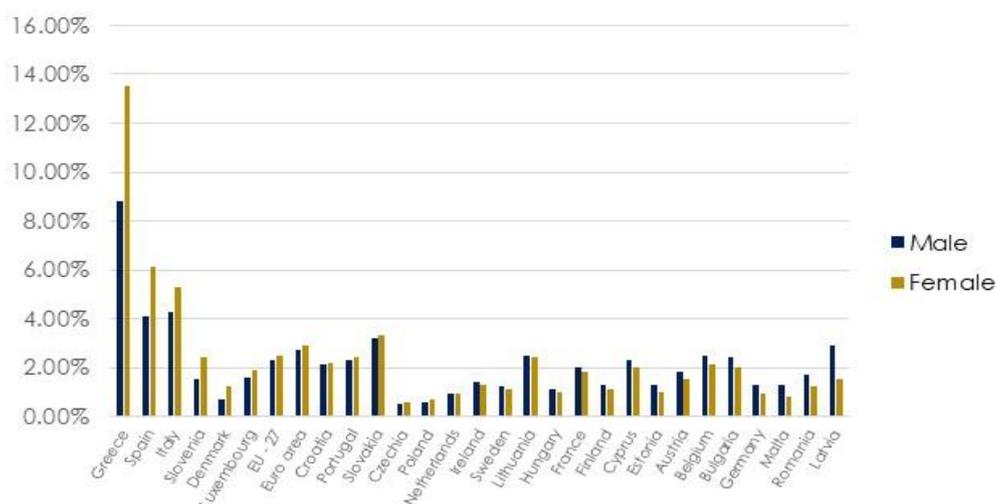
Continuing with Goal 8, long-term unemployment by gender is analysed¹³, in which Greece had the highest rates, as the rate for women, in 2020, was 13.5% and for men 8.8%, thus forming the highest inequality in the EU, while in the same period, the corresponding rates in the EU as a whole were 2.5% for women and 2.3% for men, significantly lower than the Greek levels.

¹¹ Sustainability Literacy and Perspectives, Panteleimon Karamalis and Anthony Efstathiadis, 2020

¹² Sustainability Literacy and Perspectives II: The Emerging Role of SDGs in the Greek educational system and everyday life, Anthony Efstathiadis and Evangelos David Delimosi, 2021

¹³ This index highlights the "complex" nature of the Sustainable Development Goals, as it could also be included to the Social Pillar.

Graph 5: Long-term Unemployment by gender – 2020



The 9th Goal, “Industry, Innovation and Infrastructure”, will be analysed using the gross domestic expenditure on Research and Development. More specifically, this indicator calculates expenditure on research and development as a percentage of GDP for each country. Greece, in 2019, was the 16th country with the highest percentage in this index in the EU, with its Research and Development expenditure at 1.27% of its GDP, showing a continuous upward trend between 2017 and 2019. The corresponding percentage at EU level, in the same period, was at 2.2%, marking an increase for the second consecutive year. The country with the lowest percentage of gross domestic expenditure on Research and Development is Romania, with 0.48%, while the country with the highest is Sweden, with 3.4%.

Finally, the goal Partnerships for the Goals [SDG 17] will be presented with the individual indicator that highlights the share of environmental taxes in total tax revenue per country. It is important to note that Greece in 2019 recorded a rate of 9.78%, which placed it in second place among the other EU Member States. The corresponding rate for the EU as a whole was 5.91%, with Greece being above the European average between 2015 and 2019. At this point, it should be noted that the percentages, resulting from the indicator "Share of environmental taxes in total tax revenue" are shaped both by the size of the tax imposed by a state on polluting activities, and by the total of polluting activities in a state, so a high value in this indicator can be formed due to high taxation on polluting activities and / or due to a large number of polluting activities occurring within a state.

Conclusion

As noted above, climate change and the gradual degradation of the natural environment have put the European Union at the heart of measures and initiatives to promote sustainable economic growth. Through a variety of legislative actions, the emphasis is placed on the pillar of the environment, which needs immediate protection from all the competent institutions of the European Community.

The present research, in addition to the presentation of European projects, also focused on recording the course of the EU member states in the field of sustainable development at environmental, social and economic level. The European average is making progress on most

of the examined sustainability indicators, which is encouraging for the transition to a green society and economy. Greece, despite the partial growth in certain indicators of sustainability, shows significant room for improvement in order to promote the transition to a green social and economic reality.

Specifically, in environmental sectors, such as the degree of municipal waste recycling, Greece records a significant deviation from the European average, not having significantly promoted recycling as a form of environmental and social contribution. At the same time, in terms of CO₂ levels emitted by new passenger cars, the percentage of both our country and the EU as a whole was relatively high, highlighting the need to reduce it, while, in fact, Greece is in the middle in terms of greenhouse gas emissions in the Union. However, we should not miss the positive course of Greece in areas such as the water quality of bathing areas as well as the use of renewable energy sources, where it is close to the corresponding European average.

Corresponding conclusions can be drawn about the position of Greece in the social axis of sustainable development. The need to improve rates in key indicators, such as the level of poverty of its employees, the cognitive adequacy of students in basic courses and the participation of women in senior management positions in listed companies is obvious. Remarkable, however, is the improvement it has made in terms of funding for research on rural development, while its high position over time in terms of the life expectancy of its citizens is also important.

Finally, regarding the economic pillar of sustainable development in Greece, although it has made progress, however, most sub-indicators highlight the possibility of further progress, based on the corresponding European average. Specifically, our country still has high percentages of young people who are out of employment, education or training, while, in fact, recorded a negative first in terms of long-term unemployment between the sexes for the year 2019, when there were significant inequalities between men and women in terms of employment. Of course, we should not overlook the progress that Greece has made in areas such as the funding for research and development as a percentage of its GDP, as well as its second largest share in the share of environmental taxes in its total income.

In conclusion, the overall effort to move to a European green economic and social reality made by all EU Member States can be significantly assessed, inter alia, by the way in which members present the implementation of the 17 Sustainable Development Goals, as set out in the 2030 Agenda. The European countries as a whole should not be overlooked in achieving sustainable development, without, of course, this implying complacency, as further "steps" and legislative actions need to be taken in order to fully achieve the European goal of sustainable development.