# SUSTAINABILITY IN EUROPEAN UNION REGIONS AND CITIES WITH PRIORITY IN GREECE: RECENT CHANGES, POLICY RECOMMENDATIONS

**Minas Angelidis**
*Professor Emeritus, National Technical University of Athens, School of Architecture, Department of Urban and Regional Planning*
*angelimi763@gmail.com*

**Eleni Drakouli**
*Ph.D NTUA, National Technical University of Athens, School of Architecture, Department of Urban and Regional Planning*
*eleni_drakouli@yahoo.gr*

**Epameinondas Tsigkas**
*Ph.D NTUA, National Technical University of Athens, School of Architecture, Department of Urban and Regional Planning*
*etsigkas@gmail.com*

***Abstract***
*Object of the paper is the assessment of regions and cities' sustainability in European Union (EU) with focus in Greece. We will be limited to the sustainable development' main recent changes and challenges for which we will propose adequate policy recommendations.*

*Sustainability became a global level developmental and territorial concept, so it is expected that it incorporated more or less other concepts; this way, some complicated theoretical schemes including local and regional sustainable development have been created; they are explained in a first part of the paper. This discussion relates to the UN 2030 Agenda for sustainable development which has proposed seventeen (17) Sustainable Development Goals (SDGs), to achieve by 2030. Several appropriate urban / regional sustainability data and indicators are used to assess the achievement of the SDGs; we present and further discuss them, focusing in the EU area.*

*Next, we briefly consider the major changes in sustainability of EU regions and cities during the recent years, we present the corresponding EU policies and discuss their impact.*

*We then consider similar but more in-depth the respective changes and policies in Greece. In general lines, a partial progress has been achieved, which is satisfactory only regarding a small number of objectives, while the response to the Community sustainability strategies is moderate.*

*Policy recommendations at EU level emphasize on the need to make more resources and means available for the implementation of the sustainability strategy in regions and cities; in Greece comparatively even more resources and means are needed as well as stronger reform interventions that will ensure commitment to sustainability goals.*

***Key words:*** *sustainability, sustainable regions, sustainable cities, European Union, Greece*

## 1. Introduction

Object of the paper is the **assessment of sustainability of regions and cities in European Union (EU) with emphasis in Greece**. We are limited to the sustainable development' main recent changes and challenges for which we will propose adequate *policy recommendations.*

**Sustainable development / sustainability** became from the UN «Brundtland's Commission» report (Brundtland, 1987) a global level environmental but also developmental and territorial concept in search of a new model of development that will serve humans and treat the environment as a development asset.

This report defined *sustainable development that covers the needs of the present without compromising the ability of future generations to meet their own needs.*

Therefore, several conceptual schemes related to sustainability have been created, including local and regional sustainable development; these schemes were connected, as is reasonable, with the goals of achieving sustainability - as the **Sustainable Development Goals (SDGs) of UN** which have gained greater importance in recent years.

We note that from the many aspects of sustainability, here, using elements of the terminology of the present Conference, we will study *economic sustainability*, (essentially) *environmental sustainability* and *social sustainability*. We will not discuss cultural sustainability.

All these issues will be discussed in the first section of the paper.

Next, we briefly consider the major **changes in sustainability of EU regions and cities** during the last twenty years. We consider it appropriate to present the **corresponding EU policies and discuss their impact.**

We then consider similar but more in-depth the respective **changes in Greece.** We will examine, then, separately, the **relevant policies**.

The paper comes to conclusions and policy recommendations.

## 2. Sustainability and local / regional sustainability conceptual approach

### 2.1 Sustainability: concepts definitions, interconnections and complementarities

Surely, the fact that more and more of the population lives in cities, affects the sustainable development; the differentiation from this point of view, of the cities from the countryside (from the rest of the territory) provides a strongly territorial dimension to the approach to sustainability. This is about "urban" and "territorial" sustainability – to which we will refer less here.

However, the concepts of *local and regional sustainability* also have a territorial dimension. An advantage of using these concepts is that they are more closely related to the levels of (developmental and other) planning: local, regional, national, supranational, etc.

From its first configurations, the concept of sustainable development also included issues of economic and social development. For this, many (researchers and organizations) considered it appropriate to make **sustainable development an "umbrella" that would include economic development, social development and "especially environmental" development.** This whole discussion was related to the **Sustainable Development Goals of the UN** - see next.

## 2.2 The UN «Brundtland Commission» report on sustainability and its further conceptual enrichment

Another conceptual path, which is at the center of this paper is the **path from the environmental challenges to the «sustainability» set of concepts and, a bit further, to the concepts of sustainable regions and cities and, later, of the green regions and cities and the just regions and cities.**

As we know, concern for the environment and more specifically for the urban environment has been building up considerably for five decades now. As we have already stressed in the Introduction, the concept of **"sustainable development"** was proposed in the early 1990s by the **UN «Brundtland Commission» report** (Brundtland, 1987) and became universally accepted.

The delineation of "sustainability" in the case of cities has led to the development of many approaches to "sustainable cities" - see, inter alia, an extensive discussion of this issue in: (Angelidis M., 2004).

Here we need to point out that smart development, "especially environmental development" and just development are in fact **interconnected** and should be seen in the frame of a **holistic (global) approach** of development which includes an economic, an "especially (per se) environmental" and a social aspect. "Green" has replaced in fact the above mentioned "especially (per se) environmental" aspect of sustainability.

At this point, we consider it useful to *further discuss the genealogical mutation of the relevant terms*. The UN «Brundtland Commission» started from an approach focusing on environmental issues, but *because it sought to make its work effective to implement policies*, it has also included developmental and social issues in a wider holistic approach of «sustainable development» (Brundtland, 1987) – Figure 1.
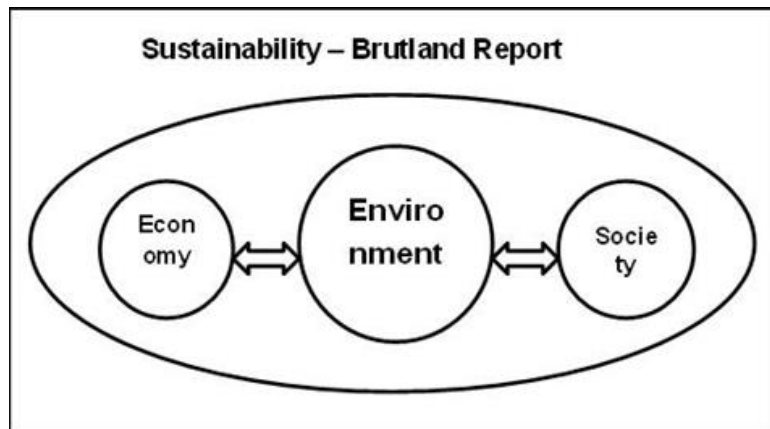


*Figure 1: Sustainability in the «Brundtland Report»*
*Figure author: Minas Angelidis*

Here, we should emphasize at first *that the sustainability set of concepts is complex and holistic* since de facto the changes in the economy, the society and the environment are more and more interrelated. Second, while it is expected that scientists and policy makers involved in *individual areas of sustainable development* (as for example, the physical environment) will pay more attention to these areas, we should keep in mind that *scientific analyses and policy proposals should consider the holistic nature of sustainability or of sustainable regions and cities*.

It is interesting to mention that, according to some researchers, the tripartite approach of sustainability is partly outdated as it does not take enough into account the progress towards a digital society – see more in Angelidis 2021.

### *2.3 The UN Sustainable Development Goals (SDGs)*

As we have already mentioned, the above discussion relates to the UN 2030 Agenda for sustainable development which has proposed seventeen (17) Sustainable Development Goals (SDGs), to achieve by 2030. Several appropriate urban / regional sustainability data and indicators are used to assess the achievement of the SDGs; we will present and further discuss them, *focusing in the EU area*.

Following the same logic of *holistic* approach, which wants to emphasize that *everything in the economy and society interacts with the environment*, United Nations has put under the umbrella of "**sustainable development goals**" all economy / development, environment, and society goals. According to the above, economy goals, environment goals and society goals, belonging to a total (seen globally) are interconnected but at the same time complementary, more precisely they have common areas of interest with each other - Figure 2.

Specifically, this holistic approach was adopted in 2015 by the UN 2030 Agenda for sustainable development which has proposed seventeen **(17) Sustainable Development Goals** (SDGs), to achieve by 2030 –see (United Nations, 2015) and (United Nations, The Sustainable Development Goals Report 2020, 2020) – Figure 3.
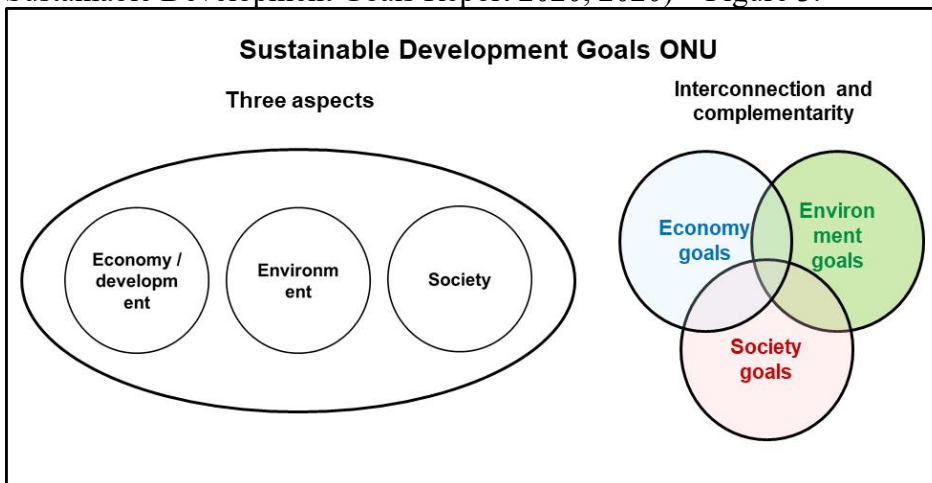
*Figure 2: UN Sustainable Development Goals: Three aspects - Interconnection and complementarity Figure author: Minas Angelidis*

*Figure 3: UN Sustainable Development Goals (2015) Credit: https://www.un-page.org/page-and-sustainable-development-goals*

**In short**, the 17 SDGs concern:

- improvements in **poverty** rates addressing material and social deprivation (SDG 1),
- addressing **malnutrition** and ensuring the viability of agricultural production (SDG 2),
- ensuring good **health** and well-being increasing healthy life expectancy (SDG 3),
- improvements in **education** leading to higher quality (SDG 4),
- addressing **gender inequalities** (SDG 5),
- ensuring the appropriate **water and sanitation** facilities for all (SDG 6),
- reducing **energy** consumption whilst increasing energy efficiency together with greater use of clean energy (SDG 7),
- helping economy recover leading to **economic growth and addressing unemployment** (SDG 8),
- developments about **industry, innovation and infrastructure** in environmentally friendly ways (SDG 9),
- reducing all types of **inequalities** (SDG 10),
- improvements in the quality of life in **cities and communities** (eg housing, mobility, environmental impacts, noise, violence and crime, recycling, etc) (SDG 11),
- ensuring **responsible consumption and production** of goods and services whilst addressing waste generation and helping circular use (SDG 12),
- more effective actions towards **climate change** (SDG 13),
- protecting **life below water** (eg marine conservation and sustainable fisheries) (SDG 14) and
- **life on land** (eg forest areas) (SDG 15),
- ensuring **peace, justice and strong institutions** (SDG 16) and
- making **partnerships** for the goals (e.g. financing developing countries) (SDG 17).

(Eurostat, 2023a) (Sustainable development in the European Union – Monitoring report on progress towards the SDGs in an EU context).

SDG indicators should be disaggregated, where relevant, by income, sex, age, race, ethnicity, migratory status, disability and geographic location, or other characteristics, in accordance with the Fundamental Principles of Official Statistics (UN General Assembly resolution 68/261). – see in the respective URL

There is a specific to cities (to human settlements, more widely) SD Goal, the **SDG 11**. However, several other SDGs also refer to regions and cities. Therefore, since we are considering here the achievement of SDGs for regions and cities, it is worthwhile to examine by priority SDG 11 but also a range of other SDGs.

As far as **Goal 11** about "**making cities and human settlements inclusive, safe, resilient and sustainable**" is concerned, the individual sub-goals/targets by 2030 generally include actions towards: ensuring adequate, safe and affordable housing and services as well as mobility for all and especially people with disabilities or people in vulnerable situations, enhancing inclusive and sustainable urbanization as well as creating economic, social and environmental links between areas, urban, peri-urban and rural, through national and regional planning, protecting cultural and natural heritage, addressing the negative environmental impacts of cities, providing  safe and inclusive access to green and public spaces, implementing integrated policies about inclusion, resource efficiency, tackling climate change and disasters and supporting least developed countries.

We should stress here that *the "achievement" of the UN SDGs is not binding, legally or through other compulsory measures or the implementation of specific programs*. The achievement of SDGs progresses to the extent that the legal regulations and the programs for sustainability are applied too – in interested countries.

This way, SDGs follow the "tradition" of the UN to be active in "development" issues such as "human development" -on the basis of the "Human Development Index (HDI)-.

*In fact, the UN 2030 Agenda and SDGs are a very powerful incentive for sustainable actions in countries, sectors and regions. The SDGs have been accepted by the UN; fact that makes them stronger; they have also been accepted by each country separately.* **Commenting whether SDGs applies only makes sense in the above context.**

**Specifically, the achievement of SDGs for regions and cities progresses to the extent that related regional and urban actions are implemented (applied). These "related" actions are regional / local or not. Here we are more interested in the regional / local ones**.

In this frame, we complementary refer in the next sections to the approach and the implementation of "smart green just" cities, as one of the policies which contribute to the achievement of SDGs for cities.

### 2.4 Complementing the sustainability approach for cities: the "smart, green, just" cities.

Apart from the SDGs' approach for regions and cities, it appeared that it was necessary to create other similar concepts at the level of cities: e.g., the concepts of smart city, green city and just city – see to more extent, among others, in Angelidis 2021.

**Smart city** is related to the "smart development" concept, a development based at first on the exploitation of the Innovation and RTD (Research-Technology-Development) towards the digital economy - see, among others, in: (Komninos, 2018) and (Angelidis & Drakouli, 2019). On the other hand, under the influence of the rapidly increasing, in our times, awareness towards the environmental issues and the elaboration of strong global and European environmental policies and more specifically urban environmental policies, the concepts of "green development" and **"green city"** were created. … Also, concepts on "(socially) inclusive development" and "inclusive city", close to "just development" and "**just city**" were also promoted during the last decade. We will come back to it in the following.

### 3. The EU answer to the UN SDGs

We should remind that the EU has adopted in 2010 a similar to UN global sustainability conceptual approach (but not identical) with **«Europe 2020» report** (European Commission, 2010) promoting smart, sustainable and socially inclusive development (inclusive is close to just -but not identical); aspects pertaining to a whole (seen globally) but also interconnected and complementary, having common areas of interest with each other – see in Angelidis 2021 the Figure 4.

The UN Sustainable Development Goals (SDGs) together with their 169 targets provide a **"worldwide policy framework** towards ending all forms of poverty, fighting inequalities and tackling climate change, while ensuring that no one is left behind. These aspects are at the heart of the **UN's 2030 Agenda for Sustainable Development".**

What does the **European Union** answer to the SDGs?

According to the EC document "'Whole-of-government' approach; the EU comprehensive EU approach towards implementing the UN's 2030 Agenda for Sustainable Development" (EC 2023b): "The EC remains committed to the 2030 Agenda. *EC has focused on delivering concrete actions that will bring tangible progress in the areas of the SDGs.*

EC has an *"holistic approach for sustainability and the SDGs"* (EC 2023b). "The President's political guidelines and the Commission's annual work programmes constitute this Commission's strategy to implement the SDGs. … Under the leadership of President von der Leyen, the Commission is implementing an ambitious policy programme to deliver on

sustainability in the EU and beyond. The SDGs are an intrinsic part of the [EC] President's political guidelines and ***lie at the heart of the policymaking on internal and external action across all sectors…***".

"… Full implementation of the UN' 2030 Agenda is crucial to strengthen resilience and prepare the world for future shocks as we embark on the ***twin green and digital transitions…***" (EC 2023b – see also the respective website).

The EU has been consistently implementing the SDGs' policy and monitoring the implementation through appropriate indicators)[9].

## 4. Sustainability evaluation criteria, indicators and databases for regions and cities -in general

Let us see what is going on regarding the sustainability of regions and cities' evaluation criteria, indicators and data used - with emphasis in the EU space.

A first attempt to develop a comprehensive system of indicators for measuring the progress towards ***urban sustainability*** was the European Commission program "European common indicators" on which a respective report was based: (European Commission, 2000).

In recent years, many efforts have been made to develop key performance indicators for sustainable cities, to be used in the formation of respective universal rating / ranking indexes (e.g., international standardization organizations, research teams / researchers, applications, programs funded by European Union, market analysis organizations, etc.).

In chapter 5, we will discuss basically the *criteria / indicators / data for EU regions and cities, structured mainly around the UN SDGs and Eurostat data elaborations and analyses.*

Because there are shortages of both data and analyzes at the level of cities, *we will complement the above analyses with some findings on sustainable / smart, green and inclusive cities* (and city' policies).

The development of sustainable regions and cities has made it necessary to evaluate the measures taken in this direction through appropriate analyses, most of which used ***criteria and indicators systems*** included in overall models of evaluation.

However, it is particularly important to ***examine criteria and indicators in depth*** *as they are used to evaluate the effectiveness of sustainable regions and cities' changes and policies / actions already implemented* and based on the respective results, *contribute to define the objectives of future actions* and, more generally, *to guide the decision-making process* in this direction.

For the most effective implementation and evaluation of any sustainable regional and local actions, in addition to the creation of widely accepted relevant criteria and evaluation indicators, relevant scientific **databases** should be created and constantly expanded. From a database of cities, data can be obtained that makes it possible to compare cities, both nationally and globally, as well as to assess the progress made within them over time. A first attempt to create an EU cities' database is the **"Urban Audit"** which is implemented with the support of the European Commission and concerns the quality of life in many European cities. At the same time, **Eurostat** produces other urban data in addition to those of Urban Audit. See for a more detailed discussion of this topic, among others, in: (Angelidis M., 2010).

There are two categories of such databases: (a) for countries, regions and cities and (b) for specific "smart green just" regional and urban actions. We will examine in section 5 the

---

[9]. On the implementation of the **SDG 11- Sustainable cities and Communities** which interest us by priority -see in (Eurostat, SDG 11 - Sustainable cities and communities, 2021a) and (Mitoula 2022).

type (a) database of Eurostat for SDGs and in section 6.2 the other type (a) and type (b) databases for EU cities.

## 5. EU data for SDGs - The role of Eurostat

As we have already mentioned, Eurostat regularly **monitors progress** towards the SDGs *in an EU context*. "It coordinates the development of the **EU SDG indicator set** (Eurostat 2023b) and keeps it up to date. It also publishes regular monitoring reports on the progress towards the SDGs" (see in the specific section of Eurostat website: https://ec.europa.eu/eurostat/web/sdi).

The EU indicator set comprises **100 indicators** that are structured along the 17 SDGs. For each SDG, it focuses on aspects that are relevant from an EU perspective. The 100 indicators have strong links with the relevant EC Communication and the EU policy initiatives in the document (Eurostat 2023c) ("*Key European action supporting the 2030 Agenda and the Sustainable Development*"). The EU SDG indicator set has been developed in cooperation with a large number of stakeholders. See the EU indicator set in detail in "EU SDG indicator set 2023      - Result of the review in preparation of the 2023 edition of the EU SDG monitoring report   - Final version of 23.5.2023".

The indicator set does not assess EU progress towards the 169 targets of the UN 2030 Agenda. Except for SDG 2 and 13, each goal has 6 indicators that are exclusively attributed to it. 33 of the 100 indicators are ***multipurpose***, meaning they are used to monitor more than one SDG. All indicators are grouped in sub-themes to underline interlinkages and highlight different aspects of each SDG.

How does Eurostat monitor progress towards the SDGs in the EU? The relevant Communication foresees **regular monitoring of progress** towards the SDGs in an EU context. The most recent monitoring report is the Eurostat publication (Eurostat, 2023a) (2023 Monitoring report…).  See also the (EU, 2020) (monitoring report …. Edition 2020)

The **monitoring report** provides a statistical presentation of trends relating to the SDGs in the EU over the past five years ('short-term') and, when sufficient data are available, over the past 15 years ('long-term'). The indicator trends are described on the basis of a set of ***specific quantitative rules*** (see the SDGs' Eurostat website).

"The progress of indicators with quantitative EU targets is examined in relation to those targets. This applies to 22 of the 100 indicators, mainly those related to environment, agriculture, energy, education, poverty, and employment. All other indicators are evaluated based on the direction and rate of change. The indicator trends are presented visually by arrows. The methodology applied is explained in detail in the 2023 monitoring report" (Eurostat 2023a). We note that "...this publication is the seventh of Eurostat's regular reports monitoring progress towards the SDGs in an EU context" (Eurostat 2023a).

Indicatively, the indicators used in the evaluation of **Goal 11** are shown in Table 1 in Annex.

## 6. SDGs' changes in EU regions and cities

### 6.1 SDGs' changes in EU regions and cities

The following **conclusions** refer to **Eurostat's 2023 monitoring report** for the assessment of progress towards the SDGs in EU countries (Eurostat, 2023). See also Figure 4 for an overview of EU progress towards the SDGs over the past 5 years (mainly 2017–2022).

Generally, the EU **deviated** from achieving the goals as a result of the COVID-19 pandemic. Moreover, Russia's *invasion in Ukraine* and its social and economic upheavals

affected countries in EU and globally. The invasion also underscored countries' energy dependence on Russia and drove up their cost of living. Combined with the ongoing climate crisis, these crises created significant obstacles to achieving the goals.

In particular, by goal:

As far as **SDG 1**, which calls for the eradication of **poverty**, is concerned, the EU has made quite ***strong progress*** in all its aspects. However, considerable differences in poverty rates were detected between Member States.

While **ending hunger and addressing malnutrition -SDG 2-** are key targets, ***progress has been modest***. EU countries faced a rise in the obesity rate between 2014 and 2019. Although labor productivity in agriculture, investments in agricultural research and innovation and organic farming have increased, more needs to be done in order to reach the 2030 target.

Concerning good **health and well-being - (SDG 3-**, EU has made ***significant progress*** despite the negative impacts of the pandemic. While healthy life expectancy has stagnated since 2016, self-perceived health in the EU has improved by 1,5% between 2016 and 2021.

The EU has also made ***significant progress*** in increasing participation in basic and tertiary **education** as well as in adult learning -**SDG4**- with the northern countries to be first in the ranking.

*Progress* was made in addressing all forms of **discrimination -SDG 5-** even though stronger progress will be needed especially about the gender gap. It is highlighted that the gender employment gap differs among Member States with the greatest values occurring in the Balkan countries.

While the EU has made ***progress*** on **sanitation** issues, trends for **water quality and scarcity** have been ***mixed***, with higher concentrations of some surface and groundwater pollutants and water seasonal variations respectively -**SDG 6**-.
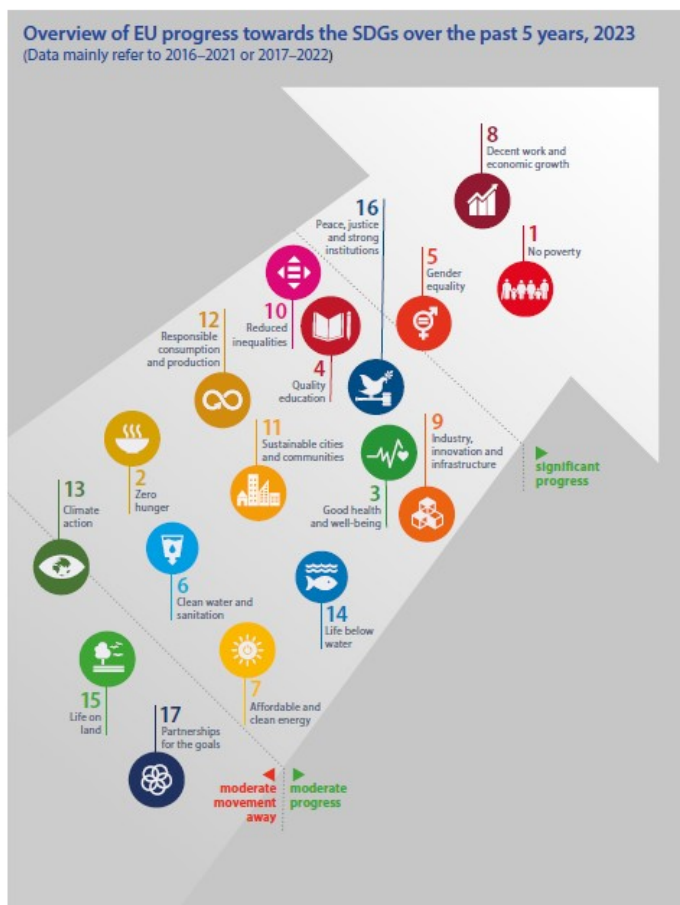


**Figure 4**:
Overview of EU progress towards the SDGs over the past 5 years, 2023 (Data mainly refer to 2016–2021 or 2017–2022)
Source of the Figure: Eurostat 2023

The EU has made ***slight progress*** towards **SDG 7** which involves developments in **energy** consumption and supply as well as access to affordable energy.

The EU is about to meet its 2030 targets for the overall employment rate (78%) and the share of young people neither in employment nor in education or training -**SDG 8**-. Working conditions have also improved, becoming safer and more secure economically (fewer fatal accidents and poverty).

The EU made strong progress towards **R&D, innovations, sustainable industries and infrastructures** with more needed to be done in the field of environmentally friendly transport -SDG 9-.

Monitoring **SDG 10** focuses on **inequalities** within and between countries, migration and social inclusion. The EU has made ***moderate progress*** towards achieving this goal. Rural poverty remains extremely high in some European countries (eg Bulgaria and Romania), while countries such as Austria, France and Belgium report much higher poverty rates in urban areas than in rural ones.

Although quality of life in **cities and communities** has improved, there is more to be done in the area of **sustainable mobility, environmental impacts and recycling** -SDG 11- as EU has made only modest progress towards this goal.

There have been improvements in consumption of raw materials, energy productivity and waste generation, although **circular use of materials** is not improving enough -**SDG 12**-.

More effort will be needed to reach **SDG 13** towards **climate** resilience as the EU faces intensifying climate impacts. In this direction it is noted that more governments have joined the Covenant of Mayors for Climate and Energy initiative.

**Marine protected areas** have increased over the last years; however, ocean acidification and eutrophication are trends still existing -**SDG 14**-.

The EU has on average ***moved slightly away*** from **SDG 15** during the last few years. Although **terrestrial protected** (over 50% in Luxemburg) and **forest areas** have grown, recent trends for pollutant concentrations in EU rivers are mixed and species are not yet in their "favorable conservation status".

Finally, the EU has become **a safer and more just place to live** over the past few years -**SDG 16**-. However, progress in the area of **global partnership** was *mixed*. While imports from developing countries have grown (more than doubled in the period 2007-2022), financing to these countries has decreased -**SDG 17**-.


## *6.2 Complementing sustainable cities analyses: the "smart green just" cities.*

### *Criteria and indicators of evaluation of smart, green, just cities*

We present in Annex 2 the most important efforts to use indicators systems to evaluate smart green just cities, because as we have mentioned the policies towards smart green just cities contribute to the achievement of the SDGs for cities.

### *Quantitative analyses of smart green just cities and actions and their results*

*Overall quantitative analyses of urban green nature* have initially emerged in Europe; In 2009, a *Green City Index (GCI)* was calculated for 30 European major cities (EIU / Economist Intelligence Unit & Siemens, 2009) as well as for many large cities of the other continents. According to the ranking obtained from the evaluation of European cities by the EIU, in the first places for their overall performance as green cities were cities of Northern Europe, while low performance was recorded mainly in Balkan cities. See in more detail in Angelidis 2021.

An overview of most European smart green just city *ratings* shows that: (a) Regarding *the countries where the cities evaluated are located*, the Nordic countries and the countries of

Central and Western Europe are ahead, followed by countries of Southern Europe, while the countries of Eastern Europe have lower performance (b) As for *the cities themselves*, despite the differences that appear according to the field of action, the same cities appear consistently in high-ranking positions: Copenhagen, Stockholm, Oslo, Vienna, Amsterdam, and a few others.

## 7. EU policies related to SDGs in regions and cities

### 7.1 Evaluating regional / local policies: from the declarations of intent to "real effects".

In next, we will present and, at the same time, evaluate EU SDGs' policies. In other words, we will examine whether the declarations of strategies end up in appropriate "real effects" or non. In our view, all the **initial statements on strategies** constitute **declarations of intent**. This is also the case regarding the SDGs' strategies.

A declaration on strategy is followed by a respective action plan. It is particularly important that the action plans be properly defined to really implement the respective strategies. If not, before the application of plans even starts, it is certain that the "**real effects**" of the plan implementation will differ from the strategy aims (as they were declared). In other words, there is a need to include in the action plans proper financial and other means and tools as well as proper governance arrangements. Also, *making preliminary assessments* (to see for instance if the different proposed actions comply with) *to ensure necessary synergies is of crucial importance*.

### 7.2 EU sustainability strategies and goals

In general terms, EU proposes particularly ambitious sustainability strategies and goals.

### Main policies

EU has adopted and promoted sustainable development goals more than any other mega-region of the world. Starting from objectives of Urban Agendas of European Commission and / or other EU bodies, EU implemented these objectives for most through the support of pilot innovative sustainable urban actions -see, among others, in (European Commission L. author: Rampton J., 2021). See just for an illustration, the Figure 5 (below) (compiled from Angelidis 2021), on the participation of 650 European cities in European and global city initiatives related to climate-change adaptation.

A key reference of the Community approach to sustainable (smart, sustainable and inclusive) development is the **«Europe 2020 strategy»** proposed in 2010 (European Commission 2010) -which was already mentioned in section 3.

The EU has in recent years given high priority to the policy of moving towards a **Low Carbon Emissions (LCE) economy**. The Community institutions (European Commission, European Council, European Parliament, etc.) have followed successive steps regarding this issue in recent years. The transition to the LCE economy is an especially important aspect of the whole effort of the international community and, in particular, the EU, to tackle climate change.

In particular, European Commission (EC) has incorporated in 2015 the transition to an LCE economy in the EU in the more general "**Energy Union Strategy**", which includes strategies, significantly promoted, for a competitive, circular and LCE economy (European Commission, 2020a). Also, a "New **Circular Economy** Action Plan For a cleaner and more

competitive Europe "(European Commission, 2020b) was promoted in 2020, included in the new EU policy framework called "**European Green Deal - Europe's new agenda for sustainable growth**" (European Commission, 2019). **Cohesion Policy**, a place-based to a considerable degree policy, was considered that it should play an important role in supporting the EU's transition to an LCE economy -see, among other, in (European Commission, 2020a).
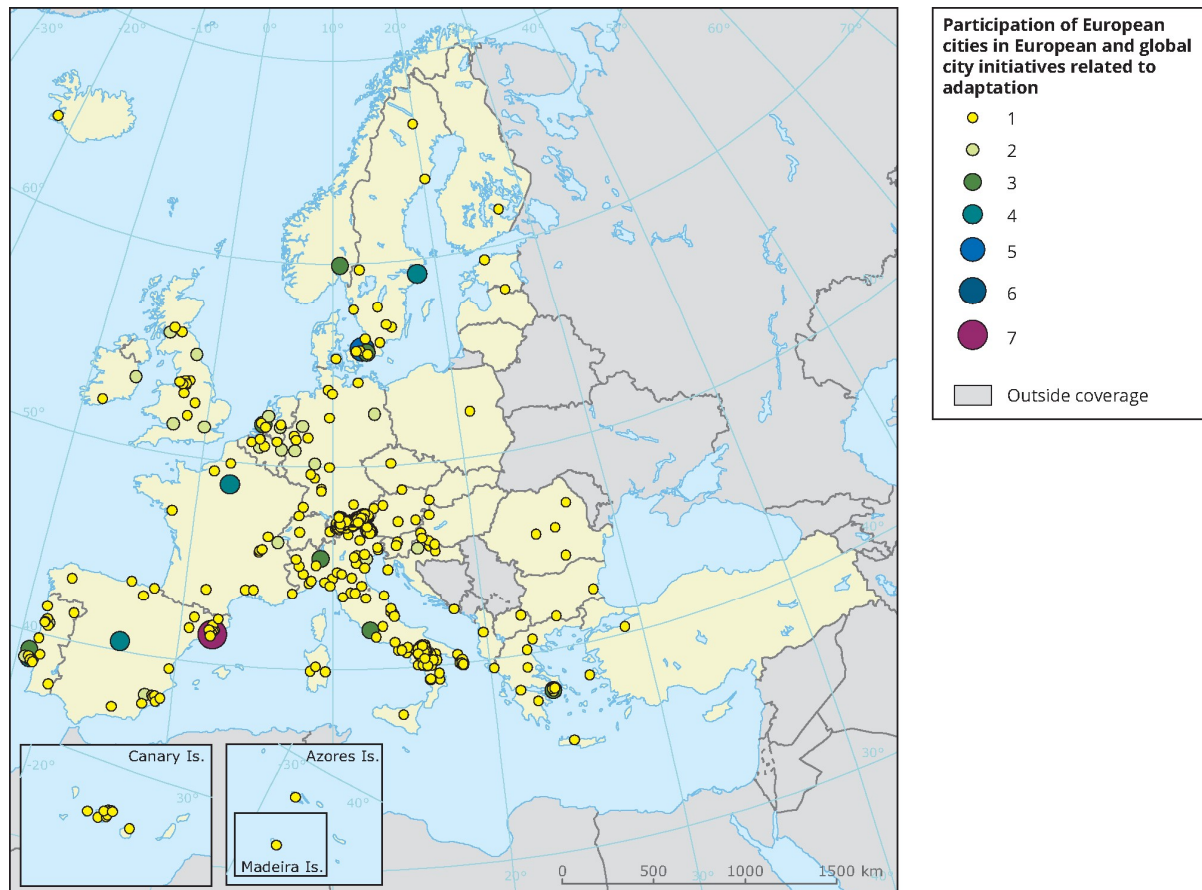


***Figure 5:*** *Participation of European cities in European and global city initiatives related to climate-change adaptation.*
Credit: https://www.eea.europa.eu/data-and-maps/figures/participation-of-650-european-cities-2

## Fast growing EU support to sustainable regions and cities' action

*During the last twenty years, EU supports a growing number of cooperation initiatives on sustainable regions and cities* developed by the Member States and even more by groups of interested regions and cities. The latter take sometimes the form of *cooperation initiatives in which the role of EU stakeholders is strong*. As the number of these initiatives is remarkably high, we will be limited to mention only some of them: (a) The *European Innovation Partnership for Smart Cities and Communities* (European Commission, 2021a) aiming at boosting the development and use of smart urban technologies. (b) *Initiatives on Urban data and studies* (c) Inclusion of certain subsidized research programs, conferences etc. for smart cities in the *Horizon 2020* program. (d) Support - reward "good practices" followed by local government and other authorities in specific cities.

It was in this context that the ideas for the *European Green Capital Award* (European Commission, 2021b) and the *Green Leaf Award* were born, recognizing the commitment of cities to achieve better environmental results. The *EU Covenant of Mayors for Climate & Energy* (Covenant of Mayors / European Commission, 2021) is an important European

movement involving local and regional authorities, which voluntarily commit to increase energy efficiency and the use of renewable energy sources in their regions (Angelidis 2021).

### *The Covid-19 pandemic and the recovery strategy. Towards more "Green" and "Digital" regions and cities.*

Covid-19 pandemic had important effects on health issues and on the overall economy and society at world level but also at EU, national and regional / city levels.

To face the health and the overall crisis, EU countries agreed to implement a radically new policy for the recovery and beyond. The core element of this policy was a €750 billion temporary recovery instrument called "**NextGenerationEU**" "to help repair the immediate economic and social damage …". More interesting for us: they stated that "*post-COVID-19 Europe will be greener, more digital, more resilient and better fit for the current and forthcoming challenges*" (European Commission and Parliament and Council, 2021) (Recovery plan for Europe). It is important to mention that NextGenerationEU implementation facilities prioritize "Green" and "Digital", supporting the European Green Deal and the Digital Transformation "as the twin transition to recovery".

### *Sustainability in the territorial Agendas: more synergy among territories and planning.*

At this point, we consider useful to refer to sustainability in relation to the recent EU territorial Agendas. We compile to some extent: (Angelidis 2021). We will refer to the "two recent (2020) Agendas: the «**Territorial Agenda 2030** A future for all places» (Ministers for Spatial Planning - EU, 2020)  and the «**New Leipzig Charter** (policy for the common good, integrated approaches, multi-level governance, place-based approaches, participation and co-creation)» (Ministers on Urban Matters - EU, 2020).This is because these two documents focus more on issues of sustainable urban planning and in particular, emphasize the importance of integrating sustainable actions in *place-based* planning.

Regarding the strategic orientation of sustainable urban planning, the *Territorial Agenda 2030* (TA 2030) states, among other things: «sector policies, municipal, regional, national, EU and other authorities, as well as various society groups need to come together. They must cooperate to balance inclusiveness, sustainability, competitiveness and resilience …».

For more specifically urban issues, TA 2030 refers to the *New Leipzig Charter (NLC)*. The last stresses out, already from its title, that the transformative power of cities should be used, by priority, *for the common good*. It, then, states that «… urgent global challenges…» «…may also intensify disparities in our societies. In addition, digital technologies are drastically transforming society, creating potential political, social, ecological, and economic benefits. However, these technologies also trigger profound new challenges such as the digital divide, lack of privacy, security issues and market dependencies …».

In the same line, NLC stresses out that national and regional urban policies should be strengthened to empower cities and contribute to consistent implementation of sustainable urban development at local level. Also, it emphasizes the need for cities to take advantage of EU financial instruments ... Cohesion Policy could by preference be used for this purpose, as it could by definition support «place-based approaches for local and regional urban projects*»*.

### *Distinct EU SDGs policies or the achievement of the SDGs passes through all areas?*

As we already mentioned, there are no distinct EU SDGs policies, as there are e.g. for the "Green" ("Green Deal") and the "Digital". As we already stressed, according to the relevant EC documents: «***EC has a holistic approach for sustainability and the SDGs"*** (EC 2023b). Also, as stated: «The SDGs are an intrinsic part of the [EC] President's political guidelines and lie at the heart of the policymaking on internal and external action **across all sectors**…". In other words, the EU actions for the achievement of the SDGs are (more or less)

the same as those for sustainability. Also, EU actions for the achievement of the SDGs *concern all sectors*.

However, it should be noted the opinion of (Lafortune et al 2021) ((«Europe Sustainable Development Report 2021» - cited in Koundouri et al 2022 (Greek version)) that : «The EU has legislative and policy tools in place, or in preparation, to address most SDG challenges, but it still lacks clarity on how it plans to achieve the SDGs".

## 8. SDGs in Greece: existing situation – changes

### 8.1 Changes in Greece in comparison with other EU countries and the total EU

Here we will mainly examine the quantitative part of the SDGs' existing situation in Greece as well as its recent changes. The respective policies will be discussed in the next chapter.

We will mainly use the following documents: the (Presidency of the Hellenic Government. 2022) ("Greece: VNR / Voluntary National Review 2022 Greece"), the (Sachs et al 2023) (Implementing the SDG Stimulus. Sustainable Development Report 2023) and the (Eurostat, 2023a) (Sustainable development in the European Union – Monitoring report on progress towards the SDGs in an EU context. See also in (Hellenic Statistical Authority (ELSTAT) 2023).

**At a global scale**, Greece, in 2023, according to: (a) the "2023 SDG Index: score and rank" (Sachs et al 2023), ranks to 28 with score 78,4 (b) the "government SDG efforts and commitments: scores, ranks and performance" ranks to 18 with score: 78,1 (Sachs et al 2023).

**Regarding the SDGs changes 2022-23 at EU member states level (Eurostat 2023)**, Greece improved within a year, its performance in SDGs *2 / Zero Hunger, 7 / Affordable and clean energy, 10 / Reduce Inequality Within and Among Countries and 12 / Responsible consumption and production* to above the EU average – see in particular the Figure 6.

Greece "is also reported as one of only two (2021) countries in the European Union (EU) that managed to not move away from any of the 17 Goals and remained in the cluster as one of five (2022) that did not move away".

In the Figure 6 we can see, among other things, *a relatively important weakness of the entire economy – society – environment of Greece, as reflected in the SDGs: that the change of the country -most of the indicators- is included in the category "(Greece is) progressing towards these DGs but status is worse than EU".*
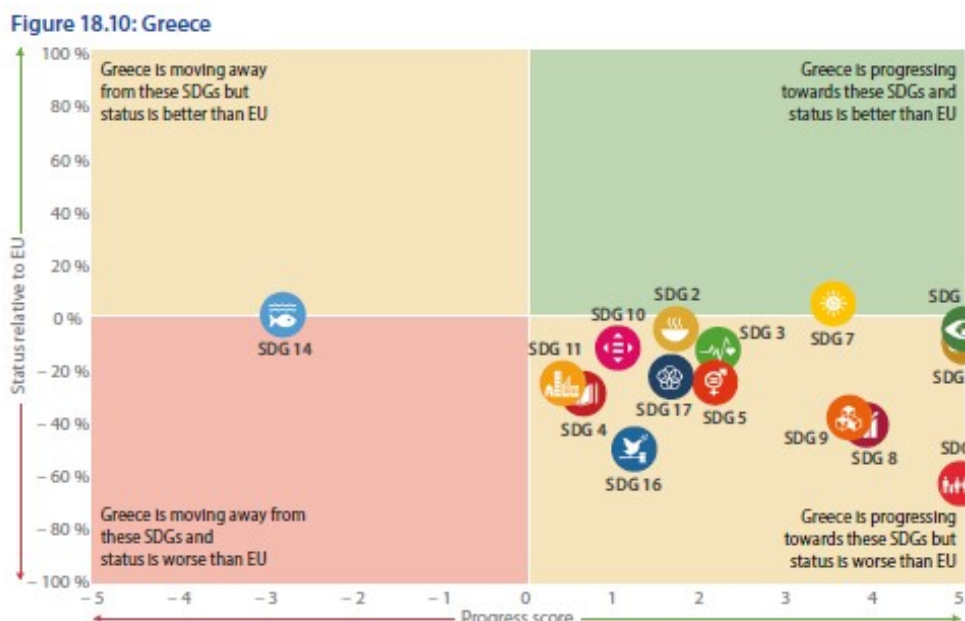


**Figure 6**: SDGs EU Member States' status and progress
Source of the Figure: Eurostat 2023
Source of the data: Eurostat

According to the (Presidency of the HR 2022) (VNR 2022 …), SDG implementation in Greece "was affected by the pandemic, albeit not invariably: plans to improve the accessibility and effectiveness of health services were negatively influenced, policies for clean energy advanced mostly undeterred and digitalization of public services was largely accelerated".

"Systemic **challenges** escalating for decades are not favoured by the crises. Of particular concern are weak demographic rates, higher female and youth unemployment and a low record on gender equality. Moreover, the pandemic brought out long overdue reforms in the health sector; the justice and waste management systems have exceeded their operations limit causing complications to the society, economy and environment".

Several long-standing challenges are showing significant **progress**; "inter alia, *poverty, unemployment, poor housing, sanitation, income disparities, early school-leaving, female participation in senior management, share of RES in energy consumption, greenhouse gas emissions, road accident fatalities and homicides…*"

## 8.2 Changes in Greek regions

From the analysis of the performance of the Greek regions in the SDG individual indicators (see mainly in (Koundouri et al 2022) (The progress of the Greek Regions in relation to the SDGs)), the following results emerged:

Thessaly and the Ionian Islands presented comparatively higher performance for 2022.

*"There is considerable heterogeneity in regional performance, and even high-performing regions face significant challenges.*

SDGs about poverty, hunger, quality education, affordable and clean energy, work and economic growth, industry, innovation and infrastructure, reduced inequalities, sustainable cities and communities and peace, justice and strong institutions (1, 2, 4, 7, 8, 9, 10, 11 and 16) that **have not been achieved by any Region.**

Among the ***positive results recorded*** are "the reduction of poverty, the reduction of income inequalities and unemployment, the reduction of early school leaving, the increase of access to health infrastructure, the increase of the participation of women in professional positions of responsibility, the increase of the use of Renewable Energy Sources, the significant limitation of greenhouse gas emissions and the significant reduction in fatal traffic accidents".

The Regions of Attica, the South Aegean and Crete should intensify their efforts, also due to the concentration of a significant population percentage (over 60%).

Especially for the calculation of some of the performance indicators e.g., about responsible consumption and partnerships for the goals (SDG 12 and 17) the need to improve the availability of data at sub-national level (NUTS2) is highlighted".

In more general terms, Greek regions, compared to the EU ones and the entire EU, had not presented remarkable progresses in SDGs.

## 9. SDGs in Greece: specific (related) policies for

In Greece, as in many other countries, the monitoring of the goals and the strengthening of their implementation has been undertaken by the Presidency of the Government. As the latter stated: "… In spite of the adversities, **Greece** remains fully committed to the Agenda 2030. The 17 Goals are embedded in all its major binding political plans. Compact strategies are launched, policies are elaborated, and institutional reforms are designed to accelerate the full implementation of the SDGs and to build back better from the COVID-19 pandemic".

Since 2017 and after the completion and mapping of the prioritization of the SDGs, "the government had arrived at a ***framework of National priorities linked to the respective SDGs*** for which various policies and actions had been developed …". The National Priorities "were divided into relevant categories.

(In more detail: "Into those that were outcome oriented, such as, for example, the promotion of a competitive, innovative and sustainable economic development and the strengthening of the protection and rational management of natural capital as a basis for social well-being and the transition to a low carbon economy, and to those that were process oriented such as Building efficient, reliable and transparent institutions and strengthening/promoting open, participatory and democratic processes" - see for more information on the assignment of priorities and SDGs the website of the General Secretariat of Legal and Parliamentary Affairs).

***SDGs implementation is going through a great number of sectoral or regional / local plans.*** Indicatively, we mention the implementation of *SDG 11 about "making cities and human settlements inclusive, safe, resilient and sustainable"* through related programs.

SDG 11 related key challenges consist of: environmental degradation, air and noise pollution, heat-island effects, habitat fragmentation, loss of ecosystem services, pressures on urban security, energy poverty, lack of sufficient green public spaces, mobility problems, etc.".

"In order for new local urban plans to address the above and promote sustainable economic activity and environmental protection regulatory modernization, simplification and codification are underway. Among *policy initiatives and measures* are the modernization of the Spatial and Urban Planning legislation in 2020, the National Spatial Strategy, the new legislation about "Urban Accessibility Plans" (2020 & 2021), Sustainable Urban Mobility Plans (SUMPs), the National Comprehensive Emergency Plan, the AEGIS National Program for Civil Protection, etc.".

## 10. Some concluding remarks and proposals

Since the SDGs are in effect an incentive for the implementation of other (sectoral, spatial) policies, the relevant conclusions should be understood accordingly as well as the points of policy recommendations.

At world level: effort to implement UN Agenda 2030 and SDGs helped a lot many countries to empower their regions and cities; sustainability policies. This concerns relatively more in underdeveloped countries and less in the EU. The latter should proceed with improvements in the governance of countries, regions and cities, in order to make more use of the SDGs.

Regarding Greece: in general lines, a partial progress towards the achievement of SDGs in regions and cities has been achieved, which is satisfactory only regarding a small number of objectives, while the response to the EU sustainability strategies is moderate.

Policy recommendations at EU level emphasize on the need to make more resources and means available for the implementation of the sustainability strategy (through SDGs) in regions and cities; in Greece comparatively even more resources and means are needed as well as stronger reform interventions that will ensure commitment to sustainability goals.

**Annex 1. SDG 11: Names and units of the indicators**

*Table 1: Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable.*

| Indicator name | Unit(s) |
|---|---|
| Severe housing deprivation rate | % of population<br>i. total<br>ii. below 60 % of median equivalised income<br>iii. above 60 % of median equivalised income |
| Population living in households considering that they suffer from noise | % of population<br>i. total<br>ii. below 60% of median equivalised income<br>iii. above 60% of median equivalised income |
| Settlement area per capita | square meters per capita |
| Road traffic deaths | persons and<br>number per 100 000 persons<br>i. total ii. Motorways iii. urban roads iv. rural roads<br>v. unknown |
| Premature deaths due to exposure to fine particulate matter (PM2.5) | number and<br>number per 100 000 people (rate) |
| Recycling rate of municipal waste | % of total municipal waste generated |

**Annex 2. Criteria and indicators of evaluation of smart, green, just cities**

Here we present, in summary, three of the most important efforts to use indicators systems to evaluate smart green just cities. See for a more detailed discussion in (Angelidis & Drakouli, 2019) and (Angelidis 2021).

The standard *ISO 37120: 2014 "Indicators for city services and quality of life"* (ISO/TC 268 Sustainable development of communities, 2014), which was revised in 2018, concerns the measurement of service efficiency and quality of life, sets seventeen key indicators for evaluating the performance of cities…"

"A second relevant, highly influential model, developed by the *research team at the University of Vienna -"TUWIEN" group-*, identifies six key categories that characterize European smart cities: Economy, Mobility, Governance, Environment, Living, People (Vienna University of Technology / VUT, Smart cities Ranking of European medium-sized cities, 2007).

"The *CITYkeys program* (CITYkeys; Bosch, P; Jongeneel, S; Rovers, V; Neumann, H-M; Airaksinen, M; Huovila, A, 2017), funded by the EU HORIZON 2020 program, has developed and validated, with the help of cities, key performance indicators and data collection procedures for shared and transparent monitoring as well as the comparability of smart actions in European cities..."

(b) Several databases for smart and green actions in EU cities have already been set up. They are usually integrated in comprehensive *"Smart Cities Information System (SCIS)"* – see in more extent, among others, in (Angelidis, M., & Drakouli, E., 2019).

**References**

Angelidis Minas, (2021), *Smart green just city actions versus urban planning in European Union,* Journal "Sustainable Development, Culture, Traditions" (SDCT), Volume 1a/2021, Athens

Angelidis, M., & Drakouli, E. (2019). *Smart and green cities in the European Union. ERSA GR17th Regular Scientific Conference: Research, Innovation, Competitiveness and Local And Regional Development 06/2019.* Athens: Panteion Univ.

Angelidis, M. (2010). Elements of comparison of Athens with Greek and European cities through suitable indicators of territorial development. *9th Panhellenic Geographical Conference organized by the Hellenic Geographical Society at Harokopio University 4-5.11.2010.* Athens: Hellenic Geographical Society.

Angelidis, M. (2004). *Sustainable development of cities in Europe and Greece* (ISBN: 960-254-637-9 ed.). Athens, Greece: Ministry of Environment, Spatial Planning and Public Works (MESPPW) and Department of Urban and Regional Planning of the School of Architecture NTUA.

Brundtland, G. (1987). *Report of the World Commission on Environment and Development: Our Common Future. UN General Assembly document A/42/427.* Oxford: Oxford University Press.

CITYkeys; Bosch, P; Jongeneel, S; Rovers, V; Neumann, H-M; Airaksinen, M; Huovila, A. (2017). *CITYkeys indicators for smart city projects and smart cities.* CITYkeys http://nws.eurocities.eu/MediaShell/media/CITYkeysD14Indicatorsforsmartcityprojectsandsmartcities.pdf.

Covenant of Mayors / European Commission. (2021). Retrieved from Covenant of Mayors for Climate and Energy EUROPE : https://www.eumayors.eu/

EIU / Economist Intelligence Unit, & Siemens. (2009). *and Siemens / EIU 2009 European Green City Index Assessing the environmental impact of Europe's major cities.* Munich, Germany: Siemens AG.

European Commission. (2021a). Retrieved from European Innovation Partnership on Smart Cities and Communities: https://ec.europa.eu/info/eu-regional-and-urban-development/topics/cities-and-urban-development/city-initiatives/smart-cities_en

European Commission. (2021b). Retrieved from European Green Capital: https://ec.europa.eu/environment/europeangreencapital/

European Commission and Parliament and Council. (2021). *Recovery plan for Europe.* Retrieved from https://ec.europa.eu/info/strategy/recovery-plan-europe_en

European Commission L. author: Rampton J. (2021). *Assessment Study of the Urban Innovative Actions 2014-2020 Final Report.* DG for Regional and Urban Policy. Luxembourg: Publications Office of the European Union. doi:10.2776/5314

European Commission. (2020a). *2020 report on the State of the Energy Union COM/2020/950 final.* Brussels: European Commission.

European Commission. (2020b). *A new Circular Economy Action Plan For a cleaner and more competitive Europe COM (2020) 98 final.* Brussels: European Commission.

European Commission. (2019). *The European Green Deal - Communication from The Commission to the Parliament, the Council, the Economic and Social Committee and the Committee of the Regions COM (2019) 640 final.* Brussels: EC. Retrieved from https://eur-lex.europa.eu/resource.html?uri=cellar:b828d165-1c22-11ea-8c1f-01aa75ed71a1.0002.02/DOC_1&format=PDF

European Commission. (2010). *EUROPE 2020 A strategy for smart, sustainable and inclusive growth COM(2010) 2020 Communication from the Commission.* Brussels: European Commission.

European Commission. (2000). *Towards a local sustainability profile: European common indicators - Technical Report.* Luxembourg: Office for Official Publications of the European Communities.

European Union. (2020). *Sustainable development in the European Union Monitoring report on progress towards the SDGs in an EU context 2020 edition .* Luxembourg: Publications Office of the EU ISBN 978-92-76-17443-1 doi:10.2785/555257.

Eurostat, (2023a). *Sustainable development in the European Union – Monitoring report on progress towards the SDGs in an EU context.* Retrieved from: https://ec.europa.eu/eurostat/en/web/products-flagship-publications/w/ks-04-23-184

Eurostat (2023b). *EU SDG indicator set*, Eurostat. https://ec.europa.eu/eurostat/web/sdi/database

Eurostat (2023c). Commission Staff Working Document, Key European action supporting the 2030 Agenda and the Sustainable Development Goals Accompanying the document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Next steps for a sustainable European future: European Union action for sustainability SWD/2016/0390 final

Eurostat. (2021a). *SDG 11 - Sustainable cities and communities.* Retrieved from Eurostat Statistics Explained: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=SDG_11_-_Sustainable_cities_and_communities&oldid=487763

Hellenic Statistical Authority (ELSTAT). (2023). *Greece: Sustainable Development Goals 2030 – Indicators and Statistics.* Retrieved from: https://www.statistics.gr/en/sdgs

ISO/TC 268 Sustainable development of communities. (2014). *ISO 37120: Sustainable develop-ment of communities - Indicators for city services and quality of life.* Geneva: ISO / International Organization for Standardization.

Komninos, N. (2018). *Smart Cities.* In Warf B., *The SAGE Encyclopedia of the Internet* (pp. 783-789). Sage Publications.

Koundouri, P., Laspidou, C., Landis, C., Plataniotis, A. Kapsikas, A., Kanellopoulou, T., Kasiolas, V., Zacharatos, T., (2022). *The progress of the Greek Regions in relation to the Sustainable Development Goals (SDGs)*, Sustainable Development Solutions Network (SDSN) Greece. Retrieved from: https://regionalpolicymonitor.org/wp-content/uploads/2022/10/SDG_Greek_NUTS2_Report_gr_final-compressed-EL.pdf.

Lafortune, G., Cortés Puch, M., Mosnier, A., Fuller, G., Diaz, M., Riccaboni, A., Kloke-Lesch, A., Zachariadis, T., Carli, E. Oger, A., (2021): *Europe Sustainable Development Report 2021: Transforming the European Union to achieve the Sustainable Development Goals.* SDSN, SDSN Europe and IEEP. France: Paris

Ministers for Spatial Planning - EU. (2020). *Territorial Agenda 2030 - A future for all places. Informal meeting of Ministers responsible for Spatial Planning and Territorial Development and/or Territorial Cohesion 1 December 2020, Germany.* Lisboa: Directorate-General for Territory (DGT).

Ministers on Urban Matters - EU. (2020). *The New Leipzig Charter - The transformative power of cities for the common good. The New Leipzig Charter - Adopted at the Informal Ministerial Meeting on 30 November 2020.* German Presidency of the Council of the EU www.bmi.bund.de.

Mitoula, R. (2022). *Individual actions for the implementation of 17 global goals of sustainable development in cities,* in Conference CHANGING CITIES V: Spatial, Design, Landscape, Heritage and Socio-Economic dimensions. Corfu, Greece

Presidency of the Hellenic Government. (2022). *GREECE VNR / Voluntary National Review 2022 on the Implementation of the 2030 Agenda for Sustainable Development.* Retrieved from: https://www.statistics.gr/en/sdgs

Sachs, J.D., Lafortune, G., Fuller, G., Drumm, E. (2023). *Implementing the SDG Stimulus. Sustainable Development Report 2023*. Paris: SDSN, Dublin: Dublin University Press, 2023. 10.25546/102924

Sustainable Development Solutions Network. (2023). *Dashboard website: Sustainable Development Report 2023 – Implementing the SDG Stimulus*. Retrieved from: https://dashboards.sdgindex.org/

United Nations. (2015). *Transforming our world: the 2030 Agenda for sustainable development A/RES/70/1*. United Nations.

United Nations. (2020). *The Sustainable Development Goals Report 2020*. United Nations.

Vienna University of Technology / VUT. (2007). *Smart cities Ranking of European medium-sized cities*. Wien: VUT - Centre of Regional Science http://www.smart-cities.eu/download/smart_cities_final_report.pdf.