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Les différences entre pays de l'UE pour les indicateurs de développement durable : c'est (surtout) l'économie !

Résumé

Les Nations unies ont adopté en 2015 l'Agenda 2030, qui fixe 17 objectifs de développement durable (ODD) et 169 cibles, couvrant les trois dimensions classiques du développement durable : économique, sociale et environnementale. L'Union européenne (UE) a élaboré son propre tableau de bord composé de 100 indicateurs, dérivés des indicateurs de développement durable établis au niveau mondial. Il ressort des méthodes d'analyse des données utilisées que les pays de l'UE se distinguent entre eux principalement par leurs indicateurs des dimensions économique et sociale : richesse/pauvreté ; santé ; éducation/emploi. S'y ajoute une quatrième thématique concernant la gouvernance. En revanche, les indicateurs sur l'environnement au sens large sont beaucoup plus hétérogènes. L'analyse nous conduit par ailleurs à isoler deux groupes de pays au sein de l'UE. D'un côté, les pays d'Europe de l'Ouest et du Nord et de l'autre les pays d'Europe de l'Est et du Sud. Tout en appartenant au premier groupe de pays, la France est le pays le plus proche de la moyenne d'une manière générale.

Mots-clés : Agenda 2030, Développement durable, Indicateurs, Union européenne, France

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The Differences between EU Countries for Sustainable Development Indicators: It is (mainly) the Economy!

Abstract

The United Nations adopted In September 2015 the 2030 Agenda, which is broken down into 17 goals and 169 targets. It covers the three traditional dimensions of sustainable development: the economic, social and environmental. The European Union (EU) has developed its own dashboard involving 100 indicators, derived from the global Sustainable Development Indicators. Our study is based on the EU's dashboard indicators. The statistical methods used to analyse the data show that the differences between the EU countries lie primarily in their economic and social indicators: income/poverty; health; education/employment. A fourth category regarding governance also distinguishes EU countries from each other to a certain extent. In contrast, the indicators relating to the environment in a broad sense are much more heterogeneous. On the basis of this analysis, two groups of countries can be identified within the EU. On the one hand, the countries of Western and Northern Europe, and on the other, the countries of East and Southern Europe. While France belongs to the first group of countries, it is closest to the EU 28 average for these indicators overall.

Keywords: 2030 Agenda, Sustainable development, Indicators, European Union, France

Classification JEL : C14, F64, I10, I20, I30, K00, O52

1. Introduction

In September 2015, the 193 Member States of the United Nations (UN) adopted the 2030 Agenda for Sustainable Development, known as the "2030 Agenda" [UN 2015], which constitutes a new global political framework. In line with its standard definition, sustainable development aims to meet the needs of the present without compromising the ability of future generations to meet their own needs[1]. It is a global approach consisting of three dimensions, the economic, social and environmental, which are very closely linked and which must be analysed consistently and as a whole.

The 2030 Agenda contains 17 goals (see list in *Annex 1*) and 169 targets. It establishes an integrated policy framework for the next 15 years. It brings together two previous agendas, that of the Millennium Development Goals (MDGs) and that of the World Summits[2]. The MDGs, adopted in 2000, only covered developing countries and focused essentially on reducing poverty and human development. The last World Summit, held in 2012 and called "Rio+20", prioritised the environmental aspect of sustainable development. The 2030 Agenda also includes commitments from other international agreements and expands its scope to include the rule of law and good governance (justice, fighting corruption, security, etc.).

The 2030 Agenda led to the development of a set of monitoring indicators known as the Sustainable Development Indicators (SDIs), of which there are 232. This dashboard approach is within the spirit of the recommendations made by the Stiglitz Commission on the Measurement of Economic Performance and Social Progress (Stiglitz et al., 2009; see also Stiglitz et al., 2018). The SDIs now constitute a reference framework for monitoring national policies. This framework is, however, flexible and adaptable to the context of the various countries or regions across the world. The European Union (EU) has therefore developed its own dashboard, derived from the global SDIs, though more restricted, involving 100 indicators.

This study, which is based on the EU's dashboard indicators,[3] brings two main kinds of results:

-The Principal Component Analysis (PCA) groups indicators into three broad categories of the economic and social domain: income/poverty; health; education/ employment. The indicators for each of these categories are strongly correlated, which is also the case for the indicators in a fourth category regarding governance. Although the intention was to broaden the approach "beyond GDP" as mentioned here above, our results show that the differences between countries for SDIs derive primarily from their level of economic development. The gross disposable income of households per capita,

[1] This definition first appeared in the Bruntland Report, the official name of which is "Our Common Future". This report was drawn up in 1987 by the UN World Commission on Environment and Development, chaired by G.-H. Bruntland.

[2] Summits between world leaders held every ten years since 1972 by the UN with the aim of defining means of stimulating sustainable development at a global level. The last World Summit, known as "Rio+20", took place in Rio de Janeiro in 2012, 20 years after the Rio de Janeiro 1992 World Summit.

[3] This study is based on a report published by the authors in *l'Economie Française 2019* entitled "La France et les objectifs de développement durable", Insee, Paris, 2019.

and to a lesser extent the GDP/capita. In contrast, the indicators relating to the environment in a broad sense are much more heterogeneous, generally having tenuous links with each other and with those of other categories. On the basis of the Hierarchical Cluster Analysis (HCA), two groups of countries can be identified within the EU. On the one hand, the countries of Western and Northern Europe, and on the other, the countries of East and Southern Europe. France is part of the first group of countries. For socio-economic indicators, as well as for indicators related to governance issues, the values are generally more positive in Western and Northern Europe than in other EU countries.

-The study of France's position in comparison with other Member States, both in overall terms and more specifically, on an indicator-by-indicator basis shows that, generally speaking, France sits around mid-table within the EU (which is also confirmed by the PCA). Poverty and monetary inequalities in the country are relatively low. Although life expectancy is high, this does not translate into the perception of better health and the country remains a poor performer in terms of road deaths. In the field of education, France is above the European average except when it comes to reducing underachievement among 15-year olds. Access to employment is still difficult, particularly for the younger generations. In terms of environmental progress, France has had mixed results: while its energy consumption has decreased, as is the case for the EU as a whole, it is struggling to meet some of its objectives, for example with regard to renewable energy. Its use of nuclear energy explains its good performance in terms of greenhouse gas emissions. France is performing at around the European average with regard to air pollution caused by fine particulates and the development of organic farming; artificial land cover per capita in the country is higher than elsewhere on the continent. Finally, the aim of the SDIs and EU dashboard is to quantify the quality of the institutions and their social link. The low homicide rate does not prevent a high prevalence of feelings of insecurity. The confidence of the French people in the European institutions is fairly low.

The remainder of this paper is organized as follows. Section 2 presents the data used for monitoring the SDGs, and especially the European Sustainable Indicators which are the basis of our study. Section 3 presents the main results of the Principal Component Analysis and of the Hierarchical Cluster Analysis applied to the sustainable development indicators in Europe. Section 4 describes in detail France's position compared with other European countries for the main categories identified by our statistical analysis.

2. Data

2.1 The UN Sustainable Development Goals Indicators

The monitoring of the 2030 Agenda required the creation of a list of indicators. A group of experts (IAEG-SDGs[4], *Box 1*), composed of representatives of 27 national statistical institutes (including Insee on behalf of France) was tasked with defining those indicators. They were adopted in March 2017 by the Statistical Commission and in July 2017 by the United Nations General Assembly (UN, 2017). In total, 232 indicators were selected (*Figure 1*).

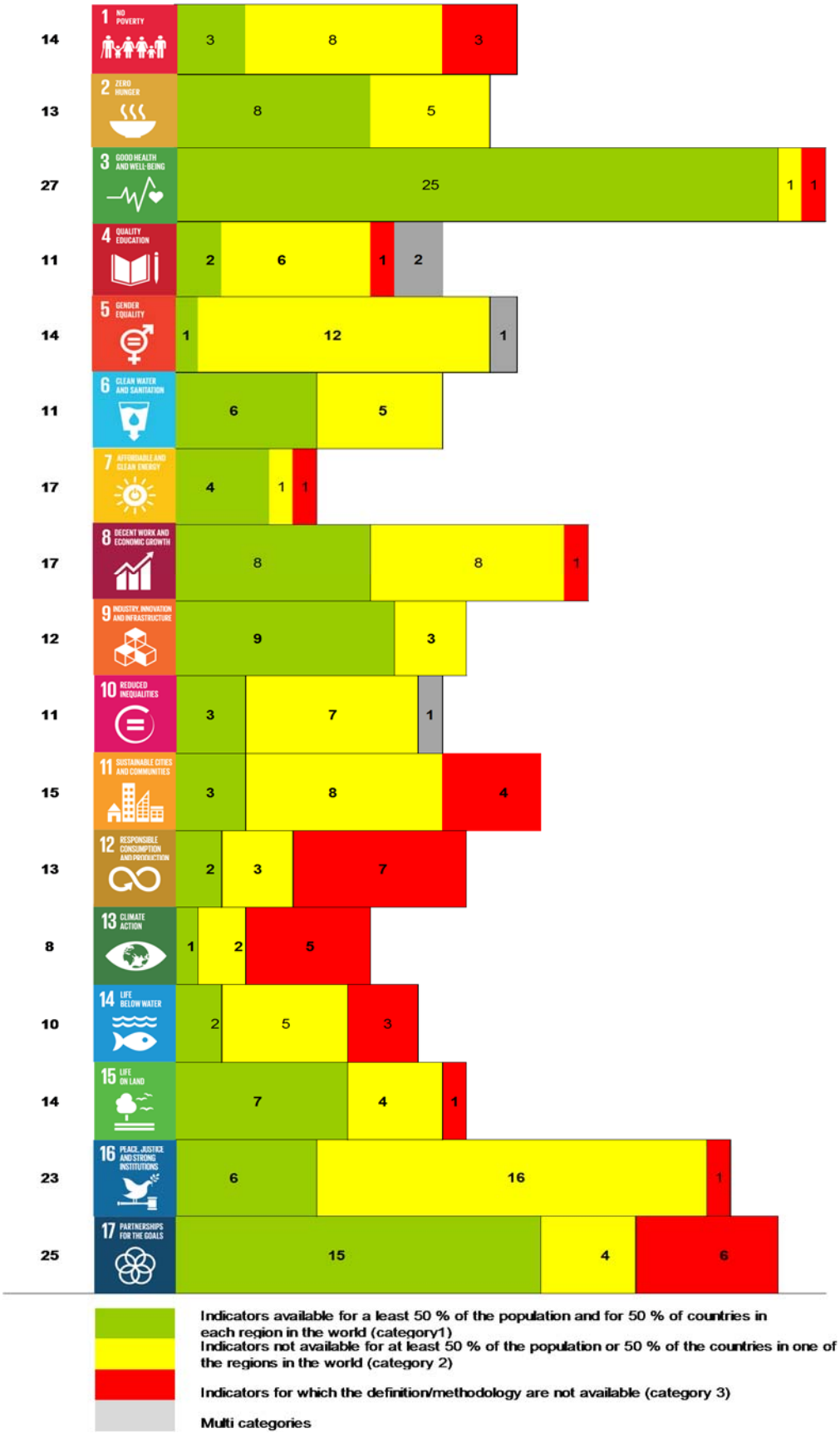
Although this number of indicators may seem very high and calls into question the ability to communicate with such a dashboard, it was difficult to select fewer than 232, given the 169 often multi-dimensional targets[5]. An annual report issued by the UN Secretariat, presented to the High-level Political Forum (HLPF), analyses the progress made with the 2030 Agenda for Sustainable Development on the basis of those indicators (UN, 2018).

In order to empower each country to achieve the objectives of the 2030 Agenda, the global indicators calculated by the UN agencies are based, as far as possible, on the official statistics and data issued by the national statistical institutes, which are invited to expand the statistics they produce by incorporating new sources. If there are no national data enabling a reliable estimate to be determined, the agencies must always consult the country concerned to seek validation before publishing their own estimates.

However, the global indicators are not necessarily applicable to all national contexts owing to the specific characteristics of each country; therefore, regional, national or even infra-national indicators are necessary in order to monitor and track the proper implementation of the 2030 Agenda. For example, the first global indicator measuring the population living with less than $1.25 a day (the international poverty line) is clearly not relevant in the case of developed countries. In addition, some countries already had their own sustainable development strategy with a framework of indicators that they wanted to adjust on the basis of the global Sustainable Development Goals (SDG). Furthermore, the level of statistical development in a given country may make it possible to use more sophisticated indicators than those used at a global level. For these reasons, the list adopted by the UN to monitor the SDGs at a global level is, in part, different from that chosen by the European Commission for monitoring at European level and even the list defined in France (*Box 2*).

[4] *Inter-Agency and Expert Group on Sustainable Development Goals* (SDGs) *indicators*.
[5] The number of indicators would be even higher – 4000 to 5000 sets at least – if the request to break the indicators down by all the population categories were to be taken into account.

Figure 1: Availability of the indicators of the global list



Source: United Nations

Box 1: The global Sustainable Development Goals, a statistical challenge

Defining the Sustainable Development Indicators (SDIs) has been a complex task because the targets were often vague and statisticians were therefore required to interpret them in order to select the indicators. What does "enhance global macroeconomic stability" mean (target 17.13) and how can it be measured? Or even, what do "access to basic services" (target 1.4), or "promote a [...] multilateral trading system" (target 17.10) mean? At times, this led to the selection of multi-dimensional or composite indicators required to grasp the complexity of the matter (for example 15.2.1 on "sustainable forest management").

At times, the statisticians selected non-statistical indicators to measure the targets, for example in the case of "end all forms of discrimination against all women and girls" with an indicator signalling the presence or absence of a legal framework intended to promote gender equality (5.1.1). Around 26% of the indicators do not fall within the field of statistics.

Other indicators were selected even though we did not know at the time how to produce them. Numerous indicators belong to areas in which the official statistics are still undeveloped, for example governance. Finally, some indicators were chosen even though their definition or methodology is still to be defined in accordance with international standards. For example, this was the case for indicator 2.4.1, which relates to areas under productive and sustainable agriculture. What does "productive and sustainable land use" mean?

The IAEG-SDGs was tasked with examining the suggestions made by the UN agencies responsible for each of the indicators and validating them. Given these restrictions, there is currently no uniform monitoring of the 2030 Agenda.

A review of the list of indicators has been planned for 2020 with the aim of remedying this. On 4 April 2019, 34 indicators (as opposed to 84 in mid-2016) remained to be defined or did not have a calculation method in accordance with international standards (category 3).

Above all, those 34 indicators are also not distributed equally among the various goals. For example, they relate to over 50% of the indicators for Goal 12 on sustainable consumption and production patterns or Goal 13 on climate change, which are both significant goals of the 2030 Agenda. Of the indicators that have been concretely defined with a solid methodology, 105 indicators have data for at least 50% of the countries and 50% of the population of each global region (category 1) and a little less than half (98 indicators) do not yet have data for at least 50% of the countries and 50% of the population of a global region (category 2). The latter is the case for SDG 5 on gender equality and SDG 16 on governance.

Providing information for all the Sustainable Development Indicators therefore constitutes a considerable challenge for public statistics, which has the obligation to fulfil this task. Without an adequate response, some indicators would be produced by other stakeholders, and much more easily at that as the proliferation of data using more accessible digital processing techniques has multiplied the producers of indicators; however, those data would lack the necessary transparency and guarantees to establish their quality and independence.

The public statistics agencies must work in partnership with the various international bodies, researchers and experts from the various domains and civil society and coordinate the work in order to maximise the return from the new data sources and the various experts.

2.2. The European Sustainable Development Indicators

At European level, there was already a list of Sustainable Development Goals, firmly embedded in the European treaties and integrated into key cross-organisational projects and sector initiatives and policies. The first European strategy to promote sustainable development was adopted by the Council in June 2001 and amended in 2006. Between 2007 and 2015, the European Commission published a report every two years on the progress of that strategy, which was based on a dashboard of Sustainable Development Indicators (SDIs) drawn up by Eurostat together with the Member States. The "Europe 2020" strategy, which is a strategy to coordinate economic policies within the European Union (EU) over a ten-year period, was also part of this framework.

Since adopting the 2030 Agenda in 2015, the EU, in coordination with its Member States, has committed to integrating the Sustainable Development Goals into the European political framework and has announced that it will regularly conduct detailed monitoring of the SDGs from 2017 onwards (European Commission, 2016). It is in this context that a new list of indicators, selected on the basis of defined principles and criteria, has been drawn up for the EU following a wide consultation[6].

In terms of the relevance of the policies, all of the indicators selected examine how the EU policies contribute to implementing the 2030 programme. These are performance indicators measuring the impacts and results of the EU policies and initiatives in a way that is simple, clear and easy to understand. Furthermore, all the indicators selected must make it possible to unambiguously interpret the intended direction of change, as defined in the EU policies and initiatives. In this sense, this set of indicators complements, from an EU point of view, the global indicators established by the United Nations by adapting them to the needs and specifics of the EU.

As regards the quality requirements, the European list of SDIs, in contrast with the global list, only includes indicators for which regular production of data is guaranteed. Furthermore, the data and metadata must be accessible to the public online. The list of indicators also takes into consideration the standard quality criteria for European statistics that feature in the European Statistics Code of Practice: frequency of dissemination, timeliness, geographic coverage, comparability between countries and across time, as well as the length of chronological series. All the indicators selected comply with international or European standards, where applicable, which is the case for the indicators based on the European statistics produced within the European Statistical System. However, the set of European SDIs also includes several indicators produced outside of the European Statistical System, in particular in the areas not sufficiently covered by the official European statistics, but for which data from external sources are available and meet the quality requirements (for example regarding climate change, marine or terrestrial ecosystems). For these indicators, Eurostat shares the responsibility with the institutions that produce the statistics (which include non-governmental organisations).

[6] The list was drawn up by Eurostat after consulting the statistical institutes of the Member States, the Commission services, the committees of the European Council, the European Statistical Advisory Committee (ESAC), non-governmental organisations, universities and other international organisations.

The set of EU SDIs is structured in line with the 17 Sustainable Development Goals and includes 100 different indicators, which appears to be the upper limit for efficient monitoring and communication. The indicators have been distributed evenly across the 17 goals to ensure a balance among the various areas. As a result, each goal has five or six indicators *(Annex 2)*. Therefore, 41 indicators are used multiple times, i.e. they are assigned primarily to one goal, but are also used as secondary indicators for other goals. This means that each objective is monitored via a total of 5 to 12 indicators. These multifunctional indicators are useful for highlighting the links between the various goals and improving the analysis in the monitoring reports. Of the 100 indicators, 88 are updated annually, and the remaining 12 less frequently; 69 indicators are derived from European statistics and 31 from other sources. This list of indicators is aligned as closely as possible to the UN list: 53 indicators come from or are similar to the list of global indicators drawn up by the UN. Finally, the EU indicators are distributed by sex, age group, level of education, region, level of urbanisation, income and disability, wherever this is relevant and possible.

While maintaining a constant total number of indicators (100), the list drawn up by Eurostat in 2017 is adjusted each year in order to incorporate indicators from new sources of available data and to take into consideration the new European priorities in the best way possible. The progress made by the EU in achieving the Sustainable Development Goals is analysed in an annual report using this list of indicators (Eurostat, 2018).

Box 2 :

The French Sustainable Development Indicators

The French approach has been parallel and quite similar to the European approach. France defined its first sustainable development strategy in 2003, following international commitments it had taken during the World Summit in Rio in 1992 and reaffirmed in 2002 at the Johannesburg Summit. As a member of the UN, France committed to take the Sustainable Development Goals of the 2030 Agenda into consideration when defining its policies.

This is the context in which a working group combining various stakeholders, led by the National Council for Statistical Information (Cnis) and chaired by Jean-René Brunetière developed a dashboard of 98 indicators to monitor the *See the Government's annual monitoring report on this subject* (Premier Ministre, 2018).

This national dashboard is a supplement to the global SDG monitoring and does not replace it. France's participation in the UN agencies' collection of national values for the global indicators is still necessary and it makes it possible to compare France's position and trajectory against those of other countries and to provide information for this component on the progress report presented to the UN High-level Political Forum.

In total, the dashboard for monitoring indicators at national level is approximately composed as follows: one third of the indicators come from the global list, one third are similar versions (slightly different

implementation of the SDGs at national level (Cnis, 2018).
The list of indicators includes the 10 wealth indicators derived from the Law of 13 April 2015 (known as the "Eva Sas Law"). This law had proposed the inclusion of "new wealth indicators" in order to evaluate public policies

definition) and one third are supplementary indicators. The list of indicators defined for France has the advantage of being more adapted to the French context and, as is the case for the European list, to the availability of the indicators. The disadvantage of this is that there is no international comparability for some of the indicators.

3. Main results of the PCA and of the HCA concerning the sustainable development indicators in Europe

Throughout the rest of this paper, we will refer to the EU list of indicators in order to analyse how France and the EU countries are performing in terms of the Sustainable Development Goals.

Of the 100 Eurostat indicators, we have selected 83, removing indicators for which we were not able to make an inter-country comparison (lacking data for too many countries or lack of data for specific countries). In three cases, the indicator on the Eurostat list in fact covers two or three sub- indicators: this refers to the indicator relating to underachievement broken down into reading, maths and science (three indicators), the energy consumption indicator, which differentiates between primary and final energy (two indicators) and the indicator relating to confidence in the European institutions (three indicators). Including these sub-indicators brings the list examined to 88 indicators.

Two statistical methods were used to analyse these 88 Sustainable Development Indicators across the 28 EU member states: Principal Component Analysis, which measures the correlations between indicators (Joliffe, 2002); Hierarchical Cluster Analysis (Lebart et al., 1984), which makes it possible to measure the proximity between EU countries.

3.1 Three indicators groupings derived from the Principal Component Analysis

The principal component analysis (PCA) makes it possible to visualize correlations, whether positive or negative, between indicators. It helps to identify patterns in the data in the case of large sets. In our case, we aim to analyse a 28 x 88 matrix (countries x indicators).

We start by standardizing all the variables (indicators).[7] We then figure out the principal components (i.e. eigenvectors), which are new variables that are constructed as

[7] Which means substracting the mean from the value of each indicator and dividing by the standard deviation.

linear combinations of the initial variables. The first principal component is calculated in such a manner that it maximizes the variance in the data set. The second principal component is calculated in the same way, with the condition that it is perpendicular to the first principal component and that it accounts for the next highest variance, etc.[8]

The amount of variance retained by the first four components is 56.3% (41.2 % for the first two components). This suggests that the indicators are spread out along many other dimensions (*Figure 2*). The analysis conducted in this section focuses on these first four components (*see Annex 3 for the results concerning the first two components*).[9]

The first component (axis 1) retains 28.5 % of the variance. This component opposes high-income and low-income countries. Indeed, the adjusted gross disposable income of households (GDI) per capita, as well as indicators strongly correlated with this indicator contribute the most to this component: share of materially deprived people, as well as corruption perceptions and the four indicators related to innovation in SDG9 (gross domestic expenditure on R&D, employment in high and medium-high technology manufacturing sectors and knowledge-intensive service sectors, R&D personnel, patent applications). Bulgaria and Romania, which are the poorest EU countries in terms of GDI/capita are the two countries which contribute the most negatively to this component, whereas Western and Northern European countries (which are the richest) all contribute very positively.

The second component (axis 2/ 12.7% of the variance) is more of a catch all. The indicators which contribute the most to this component are very diverse: death rate due to homicide; share of people with good or very good perceived health; share of rail and inland water ways activity in total freight transport; resource productivity; general government gross debt, etc. In spite of this diversity, it is remarkable to observe that two groups of countries are clearly opposed along this component: on the one hand, the three Baltic states, which characterize by the highest death rate due to homicide in the EU, as well as the lowest share of people with good or very good perceived health (with Portugal), as well as a very high share of rail and inland waterways in freight transport, low resource productivity and general government debt, etc. Southern European countries (Cyprus, Greece, Italy, Malta, Portugal and Spain), and especially Greece, Italy and Spain, have opposite performances for these indicators.

The third component (axis 3/ 8.1 % of the variance) is more difficult to interpret than the two previous ones. It mixes employment indicators (employment rate of recent graduates, people living in households with very low work intensity) with environmental ones (population covered by the Covenant of Mayors for Climate and Energy signatories,[10] evolution of the final energy consumption of households, share of

[8] See Jaadi (2019) for a very clear and synthetic explanation of the methodology: https://towardsdatascience.com/a-step-by-step-explanation-of-principal-component-analysis-b836fb9c97e2 (accessed 16th July 2019).

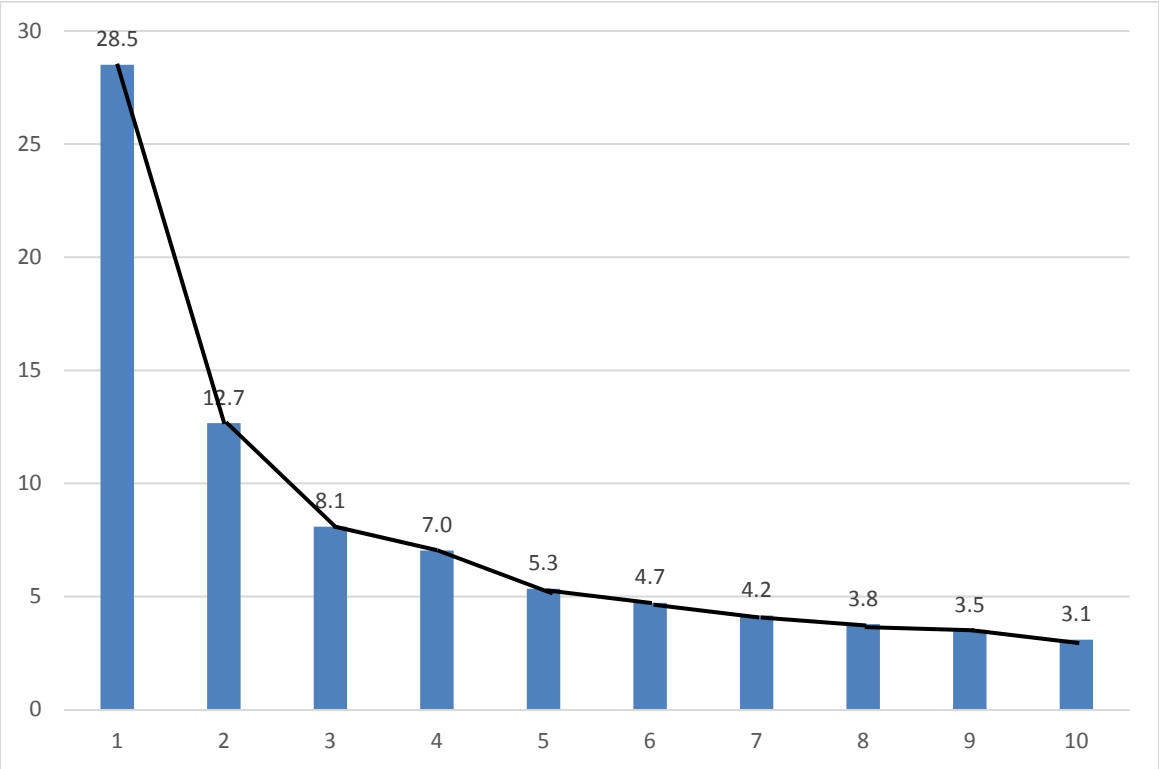
[9] There are different ways used in PCA studies to select the number of principal components to analyse. In our case, we decided to limit ourselves to 4 principal components which explain more than 50% of total variance.

[10] This indicator has been put on hold by Eurostat due to detected data problems.

renewable energies). Greece and Italy are opposed to Malta and the Czech Republic along this component: the former have better performances for the environmental indicators considered, and the latter for the employment indicators.

The fourth component (axis 4/ 7 % of the variance) opposes Eastern European countries (+Luxemburg) between themselves for indicators related to confidence in EU institutions, poverty and inequalities, etc. Luxembourg, Bulgaria, Romania and Lithuania have high rates of poverty after social transfers and of working poor by European standards. They are also unequal countries (low income share of the bottom 40% of the population). The share of the population with confidence in EU institutions is however strong (especially in Luxemburg) and much higher than the EU average. Other East European countries like Slovenia and Slovakia have a much more equal distribution of incomes and lower poverty but also lower confidence in EU institutions.

Figure 2: Percentage of variance explained by each principal component (%)



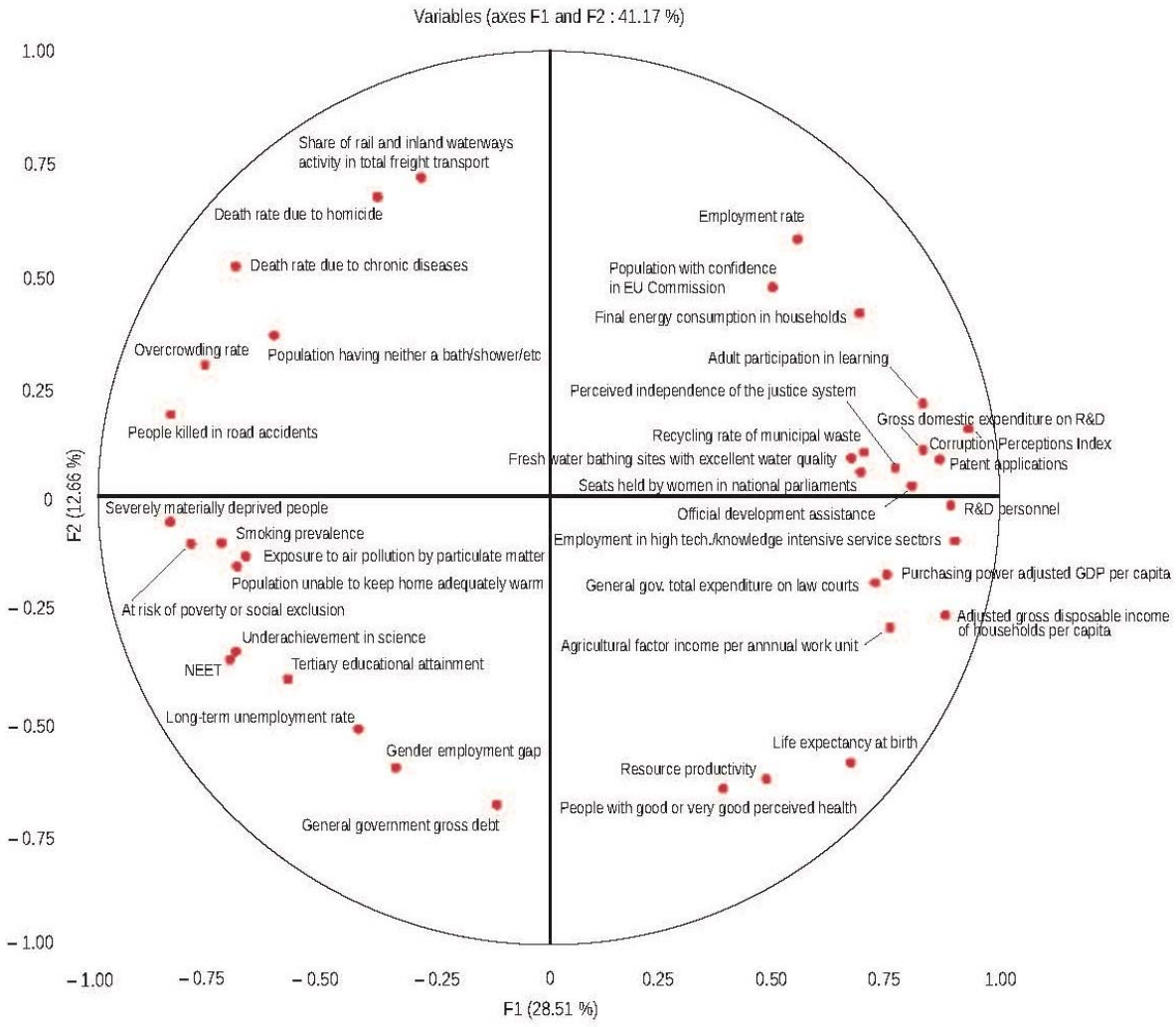
Source: Eurostat; authors' calculations

Only the 10 first principal components are represented on this figure. The % of variability explained by each principal component is obtained by dividing the eigenvalue for this component by the sum of all eigenvalues.

Figures 3a and 3b represent the best represented indicators in the PCA on the correlation circle according to the first two axes of this PCA, that is to say those closest to this circle. By convention we have retained the indicators whose distance to the circle of radius 1 is less than 1/3 (see "distance to the centre" column in *Annex 3*). These indicators number 38, which represents nearly half of the total indicators selected in our analysis.

Figure 3a:

Correlation circle with axes 1 and 2 (raw data)



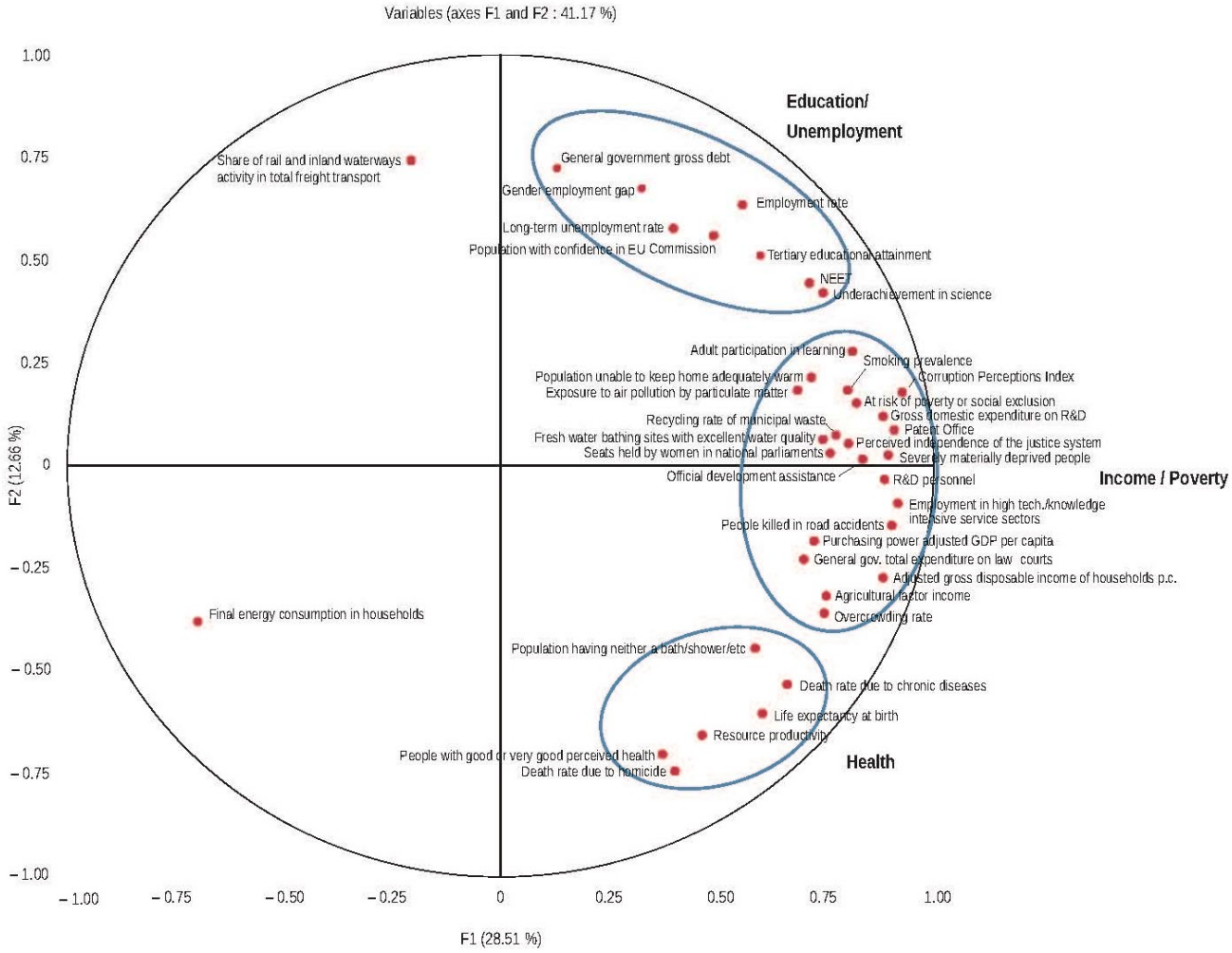
Source: Eurostat; authors' calculations

Reading:

According to the usual interpretation of the PCA, the proximity between two indicators proves a strong positive correlation between these two indicators, knowing that two indicators located on the same line passing through the origin but on each side thereof are very negatively correlated. On the other hand, two indicators located on perpendicular lines passing through the origin are not correlated with each other. This Figure represents the correlation circle drawn from the raw values of the indicators best represented in the PCA.

Figure 3b:

Correlation circle with axes 1 and 2 (corrected data)



Source: Eurostat; authors' calculations

Reading:

This Figure represents the correlation circle drawn from the corrected values of these indicators: in order to make the correlations (positive or negative) between indicators more visible on this circle, we give a negative sign to the indicators for which a great value is considered negatively by Eurostat (2018). As a consequence, to take an example, the number of people killed in road accidents on the far left of Figure 3a slightly above the x-axis is moved at the extreme right of Figure 3b, a little below the x-axis. This translation reveals a strong negative correlation between this indicator and the GDP per capita.

The PCA, which was carried out for the 28 European Union Member States and 88 Sustainable Development Indicators, groups indicators into three broad categories of the economic and social domain *(figure 2b)*: income/poverty (22 indicators well represented on the correlation circle, mainly belonging to this category) ; health (6 indicators); education/ employment (8 indicators). The indicators for each of these categories are strongly intercorrelated. Two outliers also appear on the left hand side of the correlation circle.

The income/health/education categories correspond to the components of the Human Development Index as defined by the United Nations Development Programme (UNDP, 2018). In addition, there is also correlation between the three categories: income/poverty correlates with both health and employment/education (health and education/employment, however, do not generally correlate). Governance is associated with one of the three categories above depending on the indicator.

In contrast, the indicators relating to the environment in a broad sense (in particular SDG 7 "Energy", SDG 13 "Climate" and SDG 15 "Life on Land") are much more heterogeneous, generally having tenuous links with each other and with those of other categories. Among the exceptions are exposure to pollution from fine particulates, greenhouse gas emissions and the recycling rate of municipal waste, which correlates strongly to the country's level of income (GDP/capita or gross disposable income/capita). This specificity of environmental indicators should be analysed further. Apart from data quality issues,[11] it might suggest that EU countries follow different environmental models and policies, which go beyond the structure of their economy or their economic development level. Cultural values as well as geographic characteristics play a definite role in this domain.

- The first category of indicators comprises those associated with *income, poverty and inequalities*. This group includes the majority of the indicators for SDG 1 "Poverty" and SDG 10 "Inequalities".[12]

There are also other indicators on this list that have high correlation with the incidence of poverty in a country: smoking prevalence (SDG 3 "Health"), the share of the population unable to keep home adequately warm (SDG 7 "Energy") and the rate of overcrowding in housing (SDG 11 "Sustainable Cities"). As it has been remarked hereabove, the majority of indicators for SDG 9 ("Industry, Innovation and Infrastructure") fall into this group, which reflects the correlation between the importance of innovation within a country and its level of income.[13]

[11] The sustainable development indicators related to the environment suffer from various quality problems and their overall quality is inferior to the quality ensured for socio-economic indicators. For several of these indicators a breakdown by EU countries is not available, which forced us to remove these indicators from our analysis. There are many missing values for other indicators (see indicators commented in box 3), which also prevented us from including them in the PCA/HCA.

[12] With the exception of the indicator relating to asylum applications, inclusion of which under this goal seems atypical.

[13] The last two indicators for SDG 9 relating to the proportion of public transport used for passenger travel and the share of railway and inland waterways activity in total freight transport are quite different in nature and are therefore not part of this group.

- In terms of *health*, there is close correlation between the indicators of SDG 3 ("Health"), which also often correlate with those relating to poverty and the level of national income (with the exception of self-reported unmet need for medical care). To give an example, the correlation coefficient between life expectancy at birth and the percentage of severely materially deprived people is -0.61. The correlation coefficient between life expectancy and gross disposable income per inhabitant is 0.72. The indicator relating to the population having neither a bath, nor a shower, nor or indoor flushing toilet in their household (SDG 6 "Water") also falls into this group. It is also the case for the rate of deaths attributable to road traffic accidents (SDG 11 "Sustainable Cities") and the homicide rate (SDG 16 "Peace, Justice and Strong Institutions").

- In terms of *education and employment*, the indicators for SDG 4 ("Education") are intercorrelated and correlate with the three indicators for SDG 8 ("Employment"), which relate to employment directly: young people neither in education, nor in employment and training (NEET indicator); employment rate; long-term unemployment rate. The employment gap between men and women (SDG 5 "Gender") also correlates with these indicators. The latter likewise correlate with the indicators for SDG 9 on innovation (see *above*): gross domestic expenditure on R&D; R&D personnel in the country; patent applications, etc. As already mentioned, the indicators for education and employment also correlate negatively with the poverty indicators.

- Indicators associated with *governance* also relate to one of the three groups stated above depending on the case. For example, the death rate due to homicide relates, in practice, to indicators associated with health (see *above*). The indicators associated with justice and perceived corruption are strongly intercorrelated and also correlate with the country's income per capita. Finally, the proportion of the population with confidence in the European institutions is strongly linked to employment conditions in each country (NEET and long-term unemployment in particular). Only the indicator relating to the population reporting occurrence of crime, violence or vandalism in their area seems to be weakly correlated to the other indicators on the list.

France is the country that is overall closest to the non-weighted average of the EU 28 for these indicators. In statistical terms, France is the country contributing least to the overall inertia of the observations on the 28 countries according to the results of the principal component analysis (PCA). It is the country with the lowest sum of the squares of the distances for each standardised indicator between the French value and the non-weighted EU average.

At the other end of this scale, there are four countries with the greatest differences: three countries from Eastern and Southern Europe (Bulgaria, Greece and Romania) and Luxembourg. Bulgaria and Romania have a particularly unfavourable situation compared to the EU average in terms of economic and social performance (see *hereafter*), as well as governance (see corruption perception) and for some environmental indicators. Greece has the most difficult situation in the EU in macroeconomic terms (lowest growth rate in the EU between 2012 and 2017, highest level of public debt, etc.), in terms of employment (the lowest rate of overall employment and employment rate among young graduates, in

particular) and in terms of confidence in European institutions (lowest percentage). Luxembourg is the richest country in the EU. On this basis, its economic and social performances are, on the whole, very positive, but it has mediocre performance for several environmental indicators (emissions of ammonia from agriculture, of CO_2 per inhabitant, etc.).

3.2 Two groups of countries derived from the Hierarchical Cluster Analysis

The Hierarchical Cluster Analysis method (HCA) makes it possible to measure the proximity between EU countries. This method measures the distance between two countries using the distances between the standardised SDG indicator values for each of those countries. The countries can be split neatly into two groups, roughly dividing the EU population into two equal parts[14]: on the one hand, the countries of Western and Northern Europe, and on the other, the countries of East and Southern Europe *(Figure 4)*. This classification is the same as that used by the United Nations[15], and is justified by the fact that the resulting differentiation has an economic, social and institutional, as well as geographical dimension.

The variables that contribute significantly to the segmentation between these two groups are generally similar to the economic, social and governance factors that also emerge from the principal component analysis, and generally belong to the four aspects described below (*Annex 4*). In the case of these indicators, the values are more positive in Western and Northern Europe than in Eastern and Southern Europe in terms of the average and median, with a few exceptions where the classification is the other way around (in particular household final energy consumption per capita, climate-related economic losses and the share of environmental and labour taxes in total in tax revenues).

The *first group*, which is relatively homogeneous, consists of 11 countries in Western and Northern Europe: Austria, Belgium, Denmark, Finland, France, Germany, Luxembourg, Netherlands, Republic of Ireland, Sweden and the United Kingdom. These are the richest countries in the EU, all with a GDP/capita above the European average. In particular, this group comprises all the signatories to the Treaty of Rome, with the exception of Italy, as its recent performance is closer to that of the second group of countries. As a result of their high level of income, these countries are also the least affected by poverty in its various forms. Income inequality in these countries is also lower. In accordance with the usual analyses [Deaton, 2013], the richest countries in terms of GDP/capita are also, on the whole, those with the healthiest population. In addition, these countries also benefit from both a better level of education and better employment conditions, as well as better governance.

The *second group* consists of 17 countries from Eastern and Southern Europe: Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Greece, Hungary, Italy, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovakia, Slovenia and Spain. These countries are classified as

[14] The population of the first group of countries is 278 million (2016) and the population of the second group 233 million.
[15] Our grouping differs marginally from that of the UN, as it includes the Baltic States and Cyprus in Eastern and Southern Europe.

being behind those of the first group and below the European average in terms of GDP/capita (even though the gap is minimal between Italy, which belongs to this group, and France, which belongs to the previous group). The median GDP/capita in the second group is less than two thirds (62%) of that of the first group (€23,000 as opposed to €37,000). However, convergence in GDP/capita in the former communist countries of Eastern Europe (which are the poorest in this group) towards the European average can be seen, with a growth rate of 3.3% per year between 2012 and 2017, far greater than that of the group of rich countries (1.2% per year). Performance in terms of poverty and inequalities, health, education/employment and governance is also generally much weaker. Together with Cyprus and Malta, the former Eastern European communist countries are the most recent members of the EU, joining during several accession rounds between 2000 and 2013.

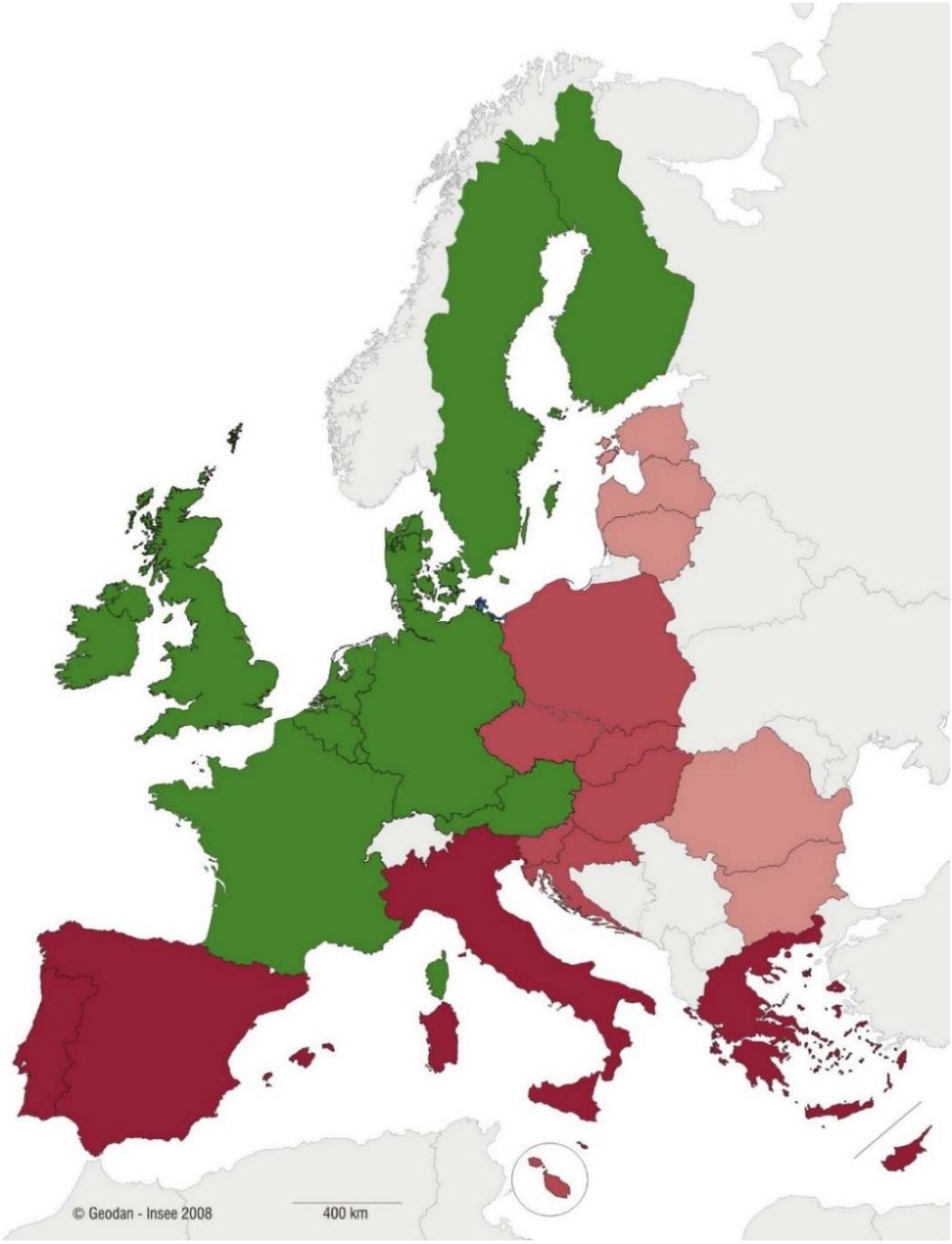
Among the 17 countries of Eastern and Southern Europe, a more detailed classification creates three subgroups, which is revealed by the dendrogram (*Figure 5*):

- The *first subgroup* of Mediterranean countries consists of Cyprus, Greece, Italy, Portugal and Spain; this group is primarily categorised by the highest level of public debt in the EU (together with Belgium), low homicide rates (with the exception of Cyprus) and high life expectancy, a high poverty rate among people in employment and low rates of employment of recent graduates, a high percentage of young people neither in employment nor in education and training, a low employment rate, significant levels of long-term unemployment and a rate of growth in GDP/capita significantly lower than in the rest of the EU over the period from 2012 to 2017, etc;

- The *second subgroup* consists of the three Baltic states (Estonia, Latvia and Lithuania) together with Bulgaria and Romania; in particular, these countries have a low standard of living and the highest rates of poverty after social transfers and inequalities in the EU (together with Spain), a moderate level of public debt, the highest rates of homicide and road traffic accidents and the lowest life expectancy in the EU (although Estonia's performance in terms of mortality and life expectancy is slightly higher than that of the other four countries in this group), etc.; in contrast, the rate of growth on GDP per inhabitant in this group of countries was very high between 2012 and 2017;

- Finally, a *third subgroup* consists of the other former Communist states in Eastern Europe (Croatia, Czech Republic, Hungary, Poland, Slovakia and Slovenia), together with Malta; this group is characterised in particular by a low number of people who have completed tertiary education, low levels of inequalities, fairly negative perceptions of the independence of the justice systems and of the level of corruption.

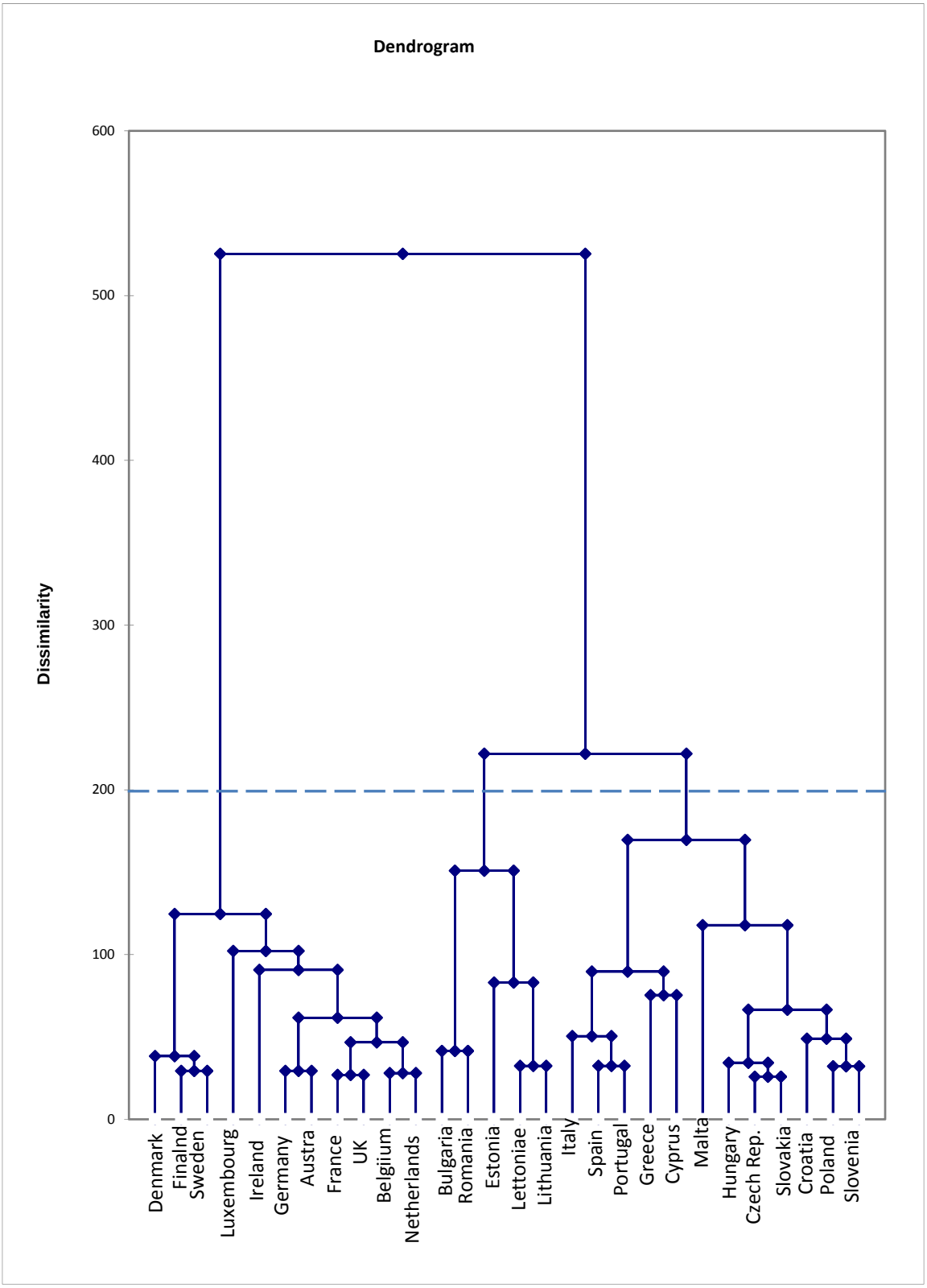
Figure 4: Classification of the EU countries for the SDG indicators



Source: Eurostat

Notes: on this map, Western and Northern Europe is shown in green; Eastern and Southern Europe has been split into three subgroups, shown in different shades of red: Southern Europe; Eastern Europe and Malta; Baltic states, Bulgaria and Romania.

Figure 5: Dendrogram from the HCA



Source: Eurostat; authors' calculations

4. France's position in comparison with other EU countries

As a result of the categories studied (as well as the problems regarding availability of data per country in the case of some indicators), the analysis is based on a little over half of the indicators selected by Eurostat, which relate primarily to the following eight goals: SDG 1 "Poverty"; SDG 3 "Health"; SDG 4 "Education; SDG 7 "Energy"; SDG 8 "Employment"; SDG 10 "Inequality"; SDG 11 "Sustainable Cities" and SDG 16 "Peace, Justice and Strong Institutions". For each of these categories (poverty/inequalities; health; education/employment; environment/energy and governance), we select the most relevant indicators, which are often common to several SDGs[16].

4.1 France has one of the lowest income poverty rates in the EU

France sits in 11th position within the EU in terms of its GDP per capita, expressed in terms of purchasing power parity. This is the lowest GDP/capita among the countries in Western and Northern European. While this indicator is commonly used to measure the wealth of the country, the adjusted gross disposable household income per capita gives an indication of purchasing power and saving capacity of households in the country. From this point of view, France does not stand out among the other countries of Western and Northern Europe and is in fourth position within the EU behind Luxembourg, Germany and Austria.

The situation in France and in the EU states in terms of poverty reflects, in particular, the levels of national income of each country and its distribution. Eurostat uses three dimensions to report statistically on poverty and social exclusion within a country: the first estimates the risk of income poverty (proportion of people living with less than 60% of the country's median standard of living); the second assesses the population living in severe material deprivation; and the third evaluates low work intensity[17]. According to the composite indicator based on the three dimensions, France appears to be one of the European countries with one of the lowest rates of people at risk of poverty or social exclusion in 2017 (17.1% as opposed to 22.4% at EU level). France's relative position in comparison with the other EU states is, however, different for each of the three components.

Owing to its redistribution policy, France is one of the European countries with the lowest rate of income poverty after social transfers [Blasco and Gleizes, 2019]. Although this has not returned to the levels before the 2008 crisis, it has nonetheless decreased slightly since 2013, dropping to 13.3% in 2017, which is three points below the EU rate (*Figure 6*). Only three countries in Western and Northern Europe (Finland, Denmark and the Netherlands) and two in Southern and Eastern Europe (Czech Republic and Slovakia) have recorded lower poverty rates. The populations most affected in France are the unemployed, single-parent families and non-retired individuals who are not working, including students. However, having a job is not always sufficient insurance against

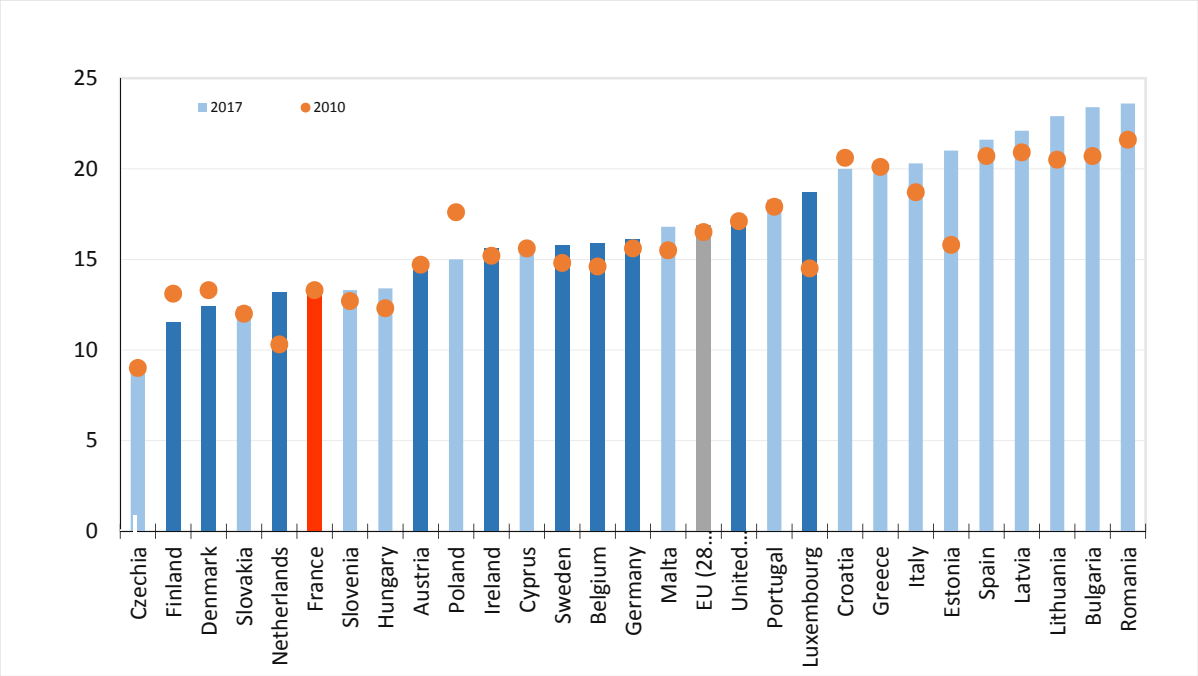
[16] The Eurostat list of indicators includes numerous indicators that are common to several SDGs due to the overlaps between SDGs. For example, the obesity rate is classified under SDG2 "Hunger" but is also part of the supplementary indicators for SDG3 "Health".

[17] Work intensity refers to the number of months for which the household members of working age have been working, and is expressed in comparison with the number of months for which they could theoretically have been working.

income poverty. In France in 2017, more than 7% of people in employment were living below the poverty line, i.e. two points below the EU level.

Figure 6: People at risk of income poverty after social transfers in the EU in 2010 and 2017

% of population



Notes: the 2017 values for the countries of Western and Northern Europe are given in dark blue.
Sources: Eurostat, European SILC system, data extracted in February 2019.

The proportion of severely materially deprived people has been dropping since 2013, both in France (-1 point) and across the EU (-3 points)[18]. In France, this rate is 4.1% of the population, compared with 6.6% in the EU (in Bulgaria, it is 30.0%). Furthermore, the proportion of people living in a household with a very low work intensity level is lower, relatively speaking, in France (8.1% in 2017) than in other countries in Western and Northern Europe, with the exception of Luxembourg. Nevertheless, several countries in Southern and Eastern Europe have considerably lower rates, first among which are Czech Republic, Estonia, Poland and Slovakia (rate below 6%).

The financial difficulties for households can have direct consequences on their housing conditions. In terms of overcrowding in housing or general housing conditions[19], France is no different from the other countries of Western and Northern Europe. The share of people living in overcrowded conditions in France is 7.7%, practically the median of the countries in Western and Northern Europe and eight points below the EU as a whole. In Romania, almost half of the population lives in a situation of overcrowding (47.0%) and the rate is above 40% in four other countries in Eastern Europe (Bulgaria, Latvia, Hungary and Poland). The proportion of people unable to maintain an adequate temperature in

[18] The Eurostat indicator definition differs from that used in France for the annual report on the new wealth indicators in terms of the number of deprivations counted.
[19] Leaks in the roof, damp walls, floor or foundation or rot in the window frames or floor; housing with neither a bath, nor a shower, nor indoor flushing toilet.

their housing in France is close to 5%, which places it among the countries with the lowest rate within Western and Northern Europe. The highest rate is observed in Bulgaria (36.5%).

4.2 Income inequalities in France

There are three indicators selected to monitor the Sustainable Development Goals in Europe that make it possible to bring together the various income inequalities within each country[20]. The inequalities measured using these indicators are generally higher in Eastern and Southern Europe than in Western and Northern Europe (*Table 1 in Annex 5*).

The inter-quintile income ratio shows the ratio of total equivalised disposable income received by the 20% of the population with the highest incomes to that received by the 20%of the population with the lowest incomes. France (4.4 in 2017) is at the same level as the other countries of Western and Northern Europe, where this ratio varies between 3.5 (Finland) and 5.4 (United Kingdom).

In terms of the share of disposable income of the bottom 40%, France was mid-table in 2016 among the countries of Western and Northern Europe, one point above the European average.

Finally, the intensity of poverty, which measures the relative gap between the median standard of living of poor people and the country's poverty line, was 16.9% in 2017 in France and is considerably lower than the EU level (24.1%) and that of other countries in Western and Northern Europe; within this group, only Finland has a lower rate (13.7%).

4.3 France has the highest life expectancy among the countries of Western and Northern Europe

In general, the situation in the countries of Western and Northern Europe is better than in the countries of Eastern and Southern Europe, even though some of the countries in Eastern and Southern Europe are some of the highest performers for certain SDG indicators associated with monitoring the health of the EU population.

Life expectancy at birth in France is the highest in Western and Northern Europe (82.7 years in 2017) and is among the highest in the EU (*Table 2 in Annex 5*), ranking third in Europe behind two Southern countries, Spain and Italy (83.4 and 83.1 years, respectively). Between the early 2000s and 2017, life expectancy at birth in the EU increased by more than three years. Although it is still higher for women than men, the gap is narrowing. Indeed, in France, as in all other European countries, life expectancy has progressed quicker for men (+3.8 years over the period) than for women (+2.7 years).

While life expectancy gives an assessment of lifespan, it does not indicate whether people are in good health. For this reason, indicators relating to perceived health are used to supplement the information on life expectancy. From this point of view, France stands

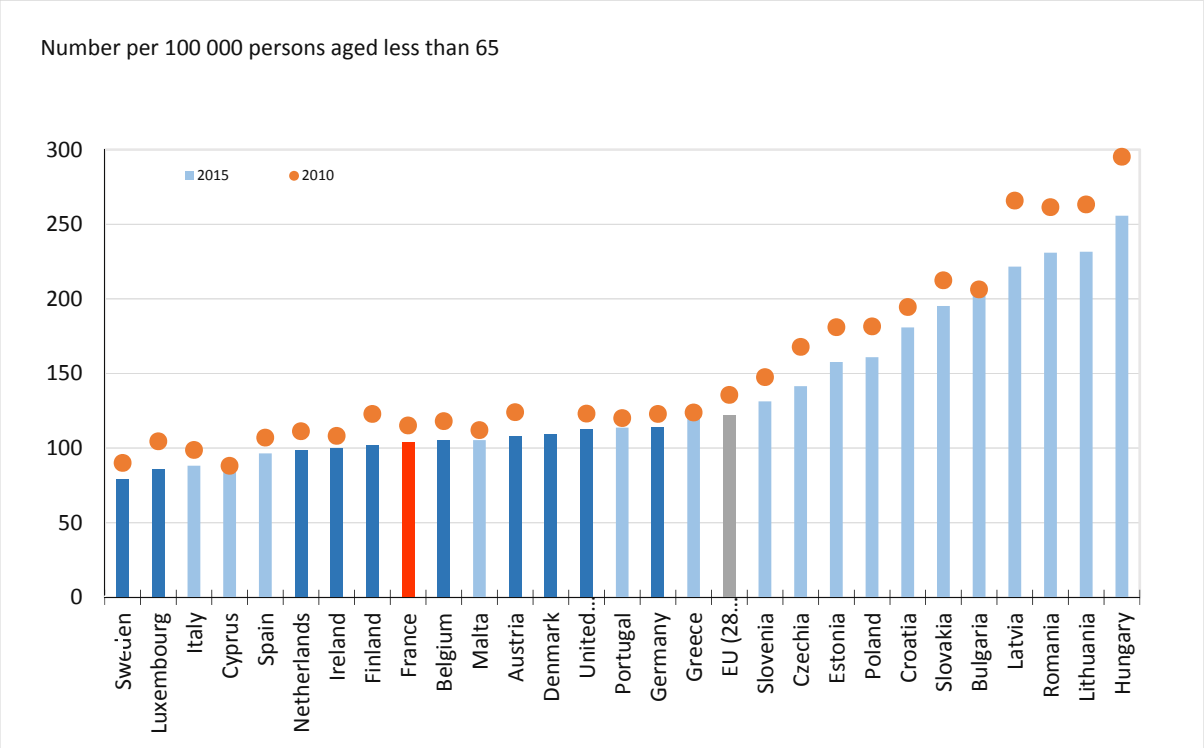
[20] The source used for these indicators is the European SILC system. This may lead to slight differences with the statistics disseminated for France by Insee, calculated using another source (Tax and social incomes survey/ERFS).

out from the other countries of Western and Northern Europe as it is one of two countries (along with Germany) in which the percentage of the population perceiving themselves to have good or very good health (67.4%) is below the European average (69.7%). Paradoxically, while women have a higher life expectancy than men, fewer perceive themselves to be in good health. In France in 2017, 65.7% of women and 69.2% of men considered their health to be good or very good, leaving a gender gap of 3.5 percentage points. In 2017, men considered their health to be better than women in all EU Member States, with the exception of Ireland (Moisy, 2019).

4.4. In France, death rates due to road traffic or accidents at work are higher than in the EU

Life expectancy is dependent on the conditions of mortality in the year in question. Increases in life expectancy therefore correlate strongly with reductions in causes of early death. While deaths due to chronic and transmitted diseases are tending to decrease, the gaps between the two groups of countries remain considerable (*Figure 7*). In France, the death rate due to chronic diseases was 104.2 per 100,000 inhabitants in 2015, which does not stand out among the countries of Western and Northern Europe. In contrast, France, along with Austria, does stand out on account of its death rate due to tuberculosis, HIV (human immunodeficiency virus) and hepatitis (2.1 per 100,000 inhabitants for the three diseases combined), significantly higher than other countries in Western and Northern Europe in 2015. However, this rate is below the EU level (2.9 per 100,000 inhabitants).

Figure 7: Death rate due to chronic diseases in the EU in 2010 and 2015



Notes: the 2015 values for the countries of Western and Northern Europe are given in dark blue.
Source: Eurostat, data extracted in February 2019.

Road traffic accidents are also a major cause of death. In France, the rate of people killed in a road traffic accident in 2015 was 5.2 per 100,000 inhabitants. In this respect, France's performance is poorer than the majority of countries in Western and Northern Europe, with a rate close to the European rate. Furthermore, France also stands out on accounts of the high number of people killed in accidents at work, 2.7 per 100,000 employees in 2016, which is higher than the European Union rate (1.7 per 100,000 employees)[21].

Among the risk factors for health, tobacco consumption is responsible for a significant percentage of morbidity (cancers, cardiovascular and respiratory diseases) and early mortality. France stands alone among the countries in its group due to its high prevalence of tobacco use: in 2017, 36% of people aged 15 or above stated that they were smokers. With the exception of Austria and France, all the other countries in Western and Northern Europe are below the European rate – 26% in 2017. France has one of the poorest ratings in the EU (ranked 26th behind Bulgaria and Greece). In terms of obesity (body mass index of 30 kg/m^2 or above), also associated with an increased risk of morbidity and mortality, the situation in France in 2014 was more favourable than that seen in most of the other European countries. The obesity rate among the French population aged 18 or above (15.3%) is lower than the EU level (15.9%) and far lower than other countries within its group, such as the United Kingdom (20.1%) and the Republic of Ireland (18.7%).

4.5 In terms of education, France is performing at similar levels to other countries in Western and Northern Europe

Overall, in the fields of education and employment, while the gaps between the countries in Western and Northern Europe and those in Eastern and Southern Europe are narrower than in the areas discussed above, they are still significant.

In terms of education, France is performing at the same level as the countries of Western and Northern Europe and above the EU average, except when it comes to reducing underachievement among 15-year olds where its results are less positive. France also does not rank as well in the field of employment, with performance closer to that of the countries in Eastern and Southern Europe.

In France, participation in early childhood education attendance in 2016 was 100% (*Table 3 in Annex 5*). This puts the country in first place in Europe in terms of school enrolment for young children between the ages of 4 and compulsory school age.

Achievements of students aged 15 in reading, maths and science have been assessed every three years since the year 2000 via the Programme for International Student Assessment (PISA), implemented under the leadership of the OECD. In France in 2015, the rate of underachievement was 21.5% for reading, 23.5% for maths and 22.1% for science. These results place France in a poorer position than the EU average. Among the countries of Western and Northern Europe, only Finland (in 2015) achieved the goal set by the EU of reducing the percentage of underachieving adolescents to below 15% in

[21] As the definitions are not standardised, comparisons between the European Union states for this indicator are difficult.

those three subject areas by 2020.

In 2017, 8.9% of young people aged between 18 and 24 in France left initial education without obtaining a qualification or with only the *Diplôme National du Brevet* (junior secondary education certificate) and are not in training. This rate of people leaving the education system early means France is outperforming the EU average (10.6%), which is the case for two thirds of the countries. The rate in France is significantly lower than the level in Germany (10.1%) and the United Kingdom (10.6%) and below the EU target established as a goal to reduce levels to below 10% by 2020. While the early school leaving rates have been dropping in the EU since the early 2000s, the gaps between the countries remain pronounced. For example, the early school leaving rates remain high in Spain (18.3%) and in Romania (18.1%).

In general, countries with a low share of early leavers from education and training have a relatively high rate of people who have completed tertiary education. In France, the percentage of the population aged between 30 and 34 who have completed tertiary education is 44.3% (2017), which is among the lowest rates in countries of Western and Northern Europe, although it is above the EU level (39.9%). This rate can vary by a factor of two between EU countries as the gaps are partly associated with different education systems: for example, 58% of the Lithuanian population has completed tertiary education, the highest level in the EU, while Germany has a relatively low rate of 34%, which can be attributed to the importance of apprenticeships within its education system.

Lifelong training allows people to improve and develop their skills so they can adapt to changes in the labour market. In France, adult participation in learning[22] was 18.7% in 2017. Only Sweden (30.4%), Finland (27.4%), Denmark (26.8%) and the Netherlands (19.1%) have higher rates. Adult participation in learning is higher in Western and Northern Europe than in Eastern and Southern Europe by more than 10 percentage points (17.2% compared with 6.9%).

4.6 Access to employment is more difficult in France, particularly for the younger generations

Despite a fairly high performing education system, France stands out from most of the EU countries as access to employment is more difficult in the country. In France, 71.0% of people aged 20 to 64 were in employment in 2017, within the meaning of the International Labour Organization (ILO). The employment rate in France remains a little lower than in other countries in Western and Northern Europe: in Germany and Sweden, this rate is around 80%. The rate of employment in France is also a little lower than the EU level (72.2%), which is approaching the 75% goal set for 2020. Between 2012 and 2017, the employment rate in France, and in the EU, increased overall, particularly among women, in connection with greater participation in the labour market. Furthermore, France is among the ten or so European countries with the highest levels of equality in this area, with an employment rate for women 7.9 percentage points less than that for

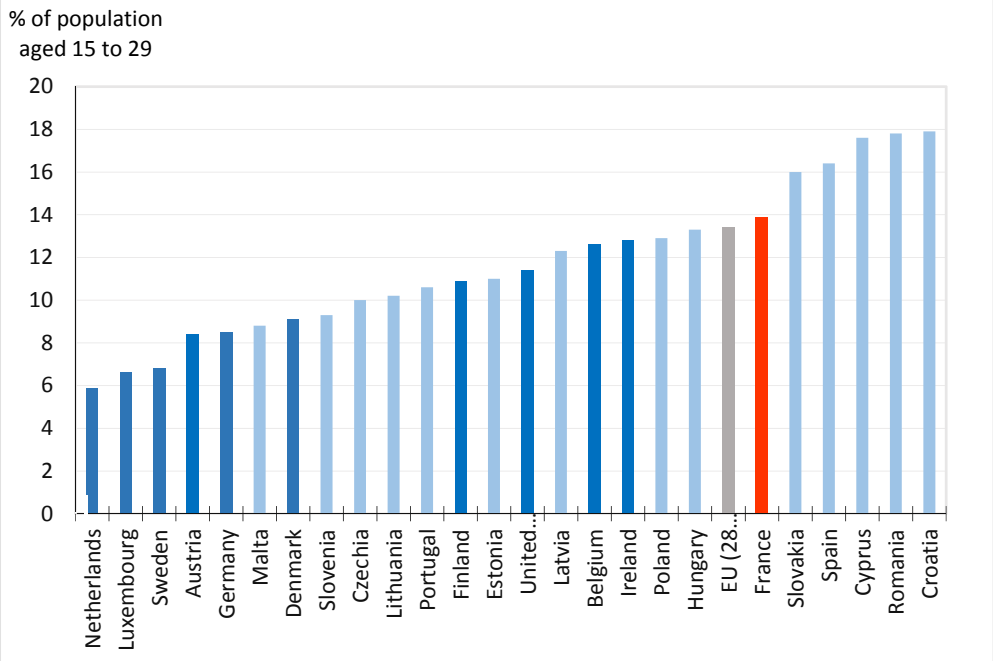
[22] The European definition is different from that usually used in France. International comparisons of this indicator should be made with caution.

men in 2017 (compared with 11.5 percentage points across the EU). In addition, the percentage of women not working due to family responsibilities in France is one of the lowest among EU countries (18.3% as opposed to 31.0% across the EU in 2017).

Access to the labour market for young people seems to be more difficult in France than in the majority of other European countries. The employment rate for 20 to 34 year-olds who have recently left education (having completed at least upper secondary education) in France was 74.4% in 2017: this is one of the lowest rates among EU countries, and a long way from the EU goal of 82% by 2020 and the current European rate (80.7% in 2017). The gap is even more pronounced when compared with other countries in Western and Northern Europe. For example, in Germany and the Netherlands, the rate is above 90%. What is more, France also stands out among the other countries of Western and Northern Europe as it has the highest proportion of young people neither in employment nor in education and training (NEET): 13.9% of young people aged 15 to 29 in 2017. The situation in France is therefore closer to that seen in some countries in Eastern and Southern Europe, although levels are not as low as in Greece and Italy where the percentage of young people neither in employment nor in education and training is over 20% (*Figure 8*).

Lastly, France also stands out as it has a long-term unemployment rate (4.2% in 2017) that is higher than the EU average (3.4%). This puts France in last place among the countries of Western and Northern Europe.

Figure 8: Young people aged between 15 and 29 neither in employment nor in education and training in the EU in 2017



Notes: the 2017 values for the countries of Western and Northern Europe are given in dark blue.
Recent breaks in series for numerous countries, including France, mean it is not possible to show the development between 2010 and 2017.
Source: Eurostat, data extracted in February 2019.

4.7 A nuanced picture in terms of environment

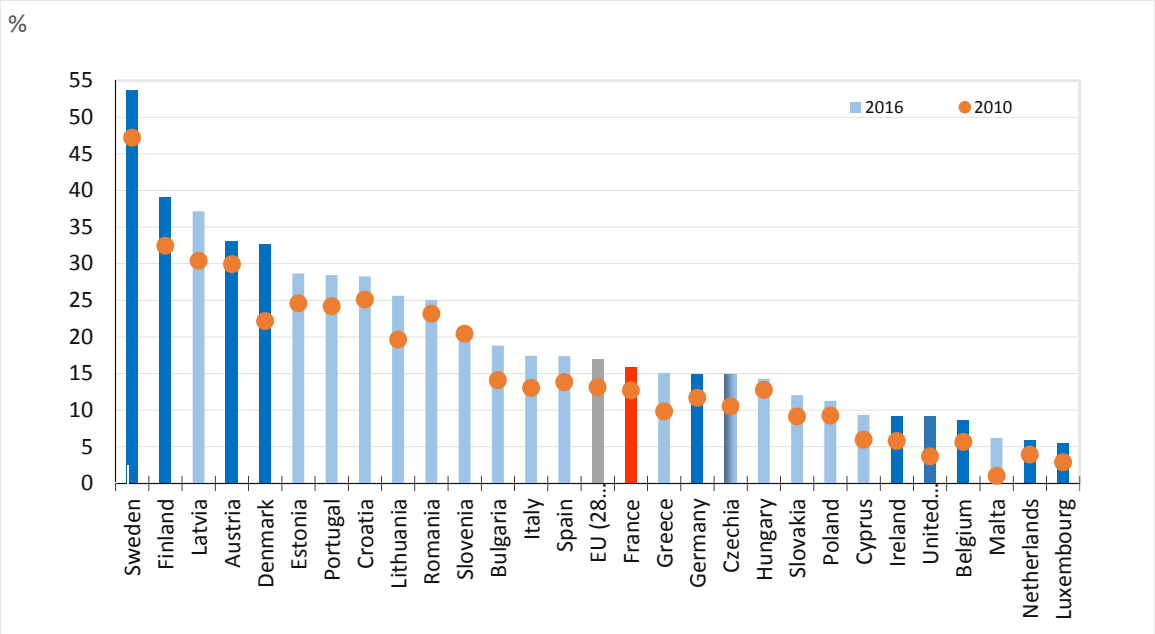
Environment and energy are important aspects of the Sustainable Development Goals. However, in contrast with the social and economic fields, the analyses conducted on the basis of the European set of indicators for monitoring the SDGs do not make it possible to create groups of EU countries with similar environmental and energy profiles. In particular, the proximities vary depending on the subject and it is not possible to find a general divide between the two groups of countries, Western and Northern Europe and Eastern and Southern Europe, for these categories.

Managing energy consumption, both in terms of quantity and on the basis of the origin of the energy produced, is one of the Sustainable Development Goals. In particular, the intention is to produce energy that is secure, affordable and sustainable in the long term. Another major Sustainable Development Goal aims to combat climate change, of which there are numerous consequences, such as rising oceans and their acidification or the increase in natural disasters.

For several years, France, as well as almost all the other European countries, have been reducing their final energy consumption, which has dropped by around 9% since 2005. However, final energy consumption in households per capita was still high in 2016, both in France and in the other countries of Western and Northern Europe: with 596 kg of oil equivalent per capita, France has similar levels to the rest of this group of countries, but is slightly above the level of European consumption (558 kg oil equivalent per capita) (*Table 4 in Annex 5*). The very significant gap in final energy consumption per capita between the countries of Western and Northern Europe and those in Southern and Eastern Europe is due to the gaps in standard of living between those countries, and, in certain cases, to the climate factors and the structure of their consumption broken down by energy type. In France, the growth in energy productivity, i.e. the capacity to produce more with the same amount of energy, is on average above 2% per year, as was the case for the European Union between 2010 and 2016, and its productivity is at the same level as the European average.

The use of renewable energies is progressing: the share of renewable energy in gross final energy consumption has increased by three percentage points in France since 2010, a rate that is slightly lower than that of the EU as a whole (*Figure 9*). By 2016, it had reached 16%, which is significantly less than those countries that have long prioritised these energies, notably Austria and countries in the north of Europe, such as Sweden, Denmark, Finland and Latvia (between 32 and 54% in 2016). France, together with the Netherlands in particular, is one of the countries in Europe lagging furthest behind in terms of achieving its objectives (23% by 2020).

Figure 9: Share of renewable energy in gross final energy consumption in the EU in 2010 and 2016



Notes: the 2016 values for the countries of Western and Northern Europe are given in dark blue.
Source: Eurostat, data extracted in February 2019.

France stands out due to the significance of nuclear among the energies used. The aim of this political choice was to manage its dependence on fossil fuels: in 2016, 47% of the total energy consumed was from imports (excluding uranium), which is significantly less than the EU as a whole (54%). This heavy reliance on nuclear for energy production makes a large contribution to the country's positive results in terms of greenhouse gas emissions as fossil fuels are major emitters of this gas.

In this way, France is one of the European countries with the lowest greenhouse gas emissions per capita: in 2016, emissions in the country were 7.1 tonnes per capita, which is 18% less than the EU overall[23]. Reduction in greenhouse gas emissions is one of the targets of the 2015 Paris Agreement on climate change. The Member States have split among themselves the effort to reduce CO2 emissions by 2030; France must reduce its emissions by 37% compared with its 2005 levels. Between 2005 and 2016, French emissions reduced by 17%.

At global level, transport contributes one quarter of all emissions. Research into new means of transport and development of public transport are therefore very widely encouraged. In 2016, France was a little above the European level in terms of the proportion of public transport used for domestic passenger transport: 18.5% of journeys were taken via bus, coach, tram or train (excludes underground systems). Together with Luxembourg, Spain and Hungary, France was, in 2012, one of the four EU countries with the lowest proportion of the population stating difficulties accessing public transport

[23] We do not have any comparisons between the states of the EU for carbon footprint.

(13%). The share or rail and inland waterways activity in total freight transport in France is well below the EU level (14% of tonne-kilometres of inland freight compared with 24%).

One of the objectives that France is striving to achieve is to reduce air and soil pollution, using both preventive action to limit emissions of pollutants and corrective action such as pollutant processing. In terms of air pollution, fine particulates, particularly from road traffic and industrial emissions, have a significant impact on the health of the population. With an average annual concentration of fine particulates (PM2.5) of 12 µg/m^3 measured in agglomerations, France ranks equally among the countries of Western and Northern Europe, though is well behind Sweden and Finland, where the concentration of fine particulates in urban areas is significantly lower (5.4 µg/m^3 and 4.9 µg/m^3, respectively).

Another factor of air pollution and of soil pollution is ammonia emissions, generated almost exclusively by agriculture. At 20 kg/hectare, French agriculture is at average European levels. It pollutes less than several of its immediate neighbouring countries such as Germany (38 kg/ha) or Belgium (47 kg/ha), but lags behind several other countries, such as Sweden (16 kg/ha), Finland (12 kg/ha) or Portugal (13 kg/ha). Changing agricultural practices is encouraged, in particular so as to limit the use of chemical products that affect both the health of the population and the environment. Europe is therefore encouraging the development of organic farming. Despite a doubling in the area cultivated under organic farming since 2010, France is still a little behind the European average for 2017 (6.0% and 7.0% of the total agricultural area used, respectively), well behind Austria which has been committed to organic farming for many years (23.4% in 2017) and countries that have made quick transformations, such as the Czech Republic, Italy and Latvia (between 13.9% and 14.9%) and Sweden (more than 19%).

Furthermore, limiting and recycling waste are also major issues, both for the environment and the economy. Although only representing 10% of all waste within the EU, the choice has been taken at European level to make waste collected at municipal level a priority. The EU has established legally binding targets for the recycling rate of municipal waste, which must reach 60% by 2030. The recycling rate of municipal waste is increasing in France, as is the case in most countries. However, with 43% of waste recycled in 2017, France is among the worst performing countries in its group.

In terms of preserving the quality of natural environments, forests form part of the European development strategies due to their positive role in biodiversity, their capacity to reduce CO_2 emissions and to fight climate change. Forests and other wooded areas only cover 31% of the area of mainland France (2015), increasing slightly from 2009 (+0.8 percentage points). This puts France among the European countries with the lowest share of forest area, close to Germany (32%), significantly behind the EU in general (42%) and a long way behind countries with low population density such as Finland (71%), Sweden (66%) and Slovenia (63%)[24].

[24] If we include France's overseas departments, in particular French Guiana, the share of forest area in France increases very significantly, but still remains below the European average.

Furthermore, in 2015, artificial land cover per capita was higher in mainland France than in the majority of European countries. The growth in artificial land cover, to meet the need for new housing or new infrastructure, is a threat to the fragile balance of ecosystems. Developed areas continue to increase in France as throughout the EU, with the exception of Luxembourg. This represents 456 m^2/inhabitant in France, more than any of its neighbouring countries, for example Germany (323 m^2/inhabitant). Across the EU the rate is 363 m^2/inhabitant.

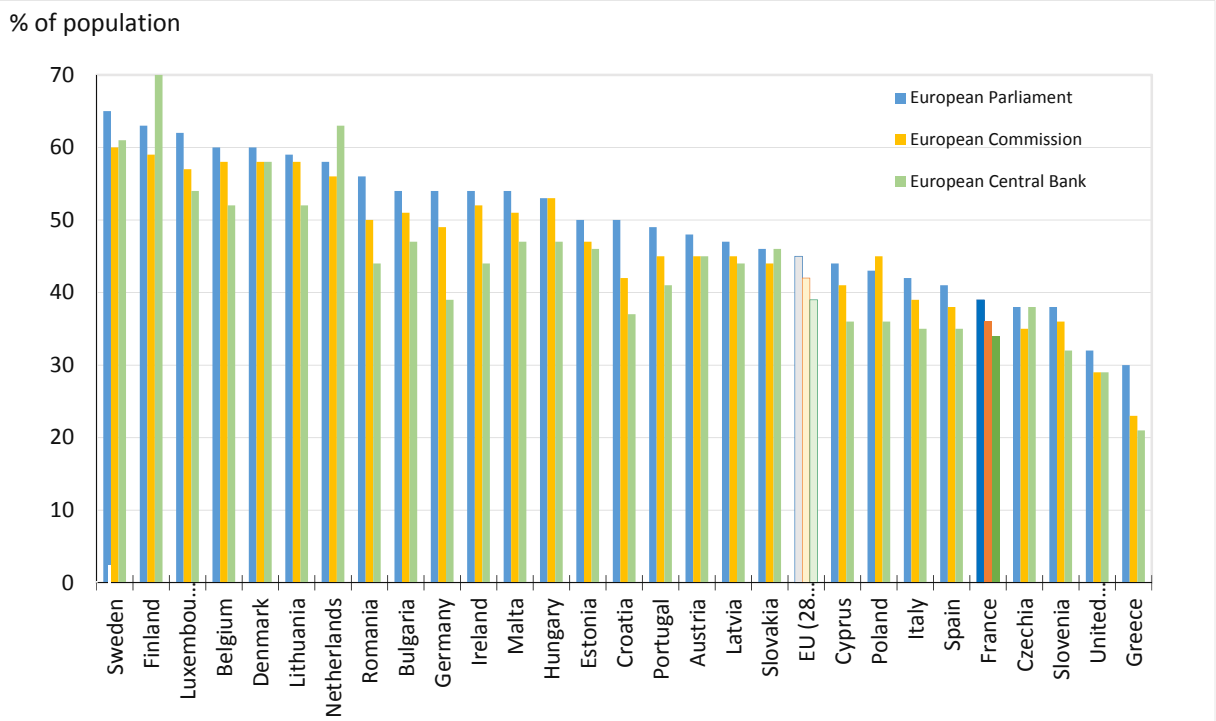
4.9 The French population has limited confidence in the European institutions

Measuring goal 16, dedicated to peace, justice and strong institutions, which was added *in extremis* to the list of Sustainable Development Goals, using statistics is a real challenge (Cling *et al.*, 2016). In France, the standardised death rate due to homicide in 2015 (0.5 per 100,000 inhabitants) is among the lowest in the EU, on par with Germany (only the United Kingdom and Ireland have lower rates) (*Table 5 in Annex 5*). Paradoxically, the best-performing countries in terms of homicide are generally those with the highest percentage of the population reporting occurrence of crime, violence or vandalism in their area (and vice versa). This is the case in France (13.9% in 2016). This negative correlation suggests that the population is more demanding in terms of safety in countries with the lower crime rates.

The indicators associated with justice have very strong intercorrelations and also correlate strongly with the country's income level. In this way, the gaps between the two groups of countries are very pronounced (varying by a factor of two) in terms of the amount of public spending per capita on justice. France is below the European average in this area. The responses gathered in each country in relation to the perceived independence of the judicial system and the corruption perception index, which come from two different sources, are very similar. In terms of these two indicators, France is close to the European average. Here, we see the correlation between confidence in the judicial system and the level of GDP/capita highlighted in international comparisons of developed countries (Algan, 2018).

Lastly, the population's confidence in European institutions as stated in the Eurobarometer survey varies significantly from country to country, with France among those with the lowest levels of confidence in this area (*Figure 10*). Countries where the labour market situation is more favourable (NEET, long-term unemployment, etc.) and those with the lowest level of public debt have greater confidence in these institutions than others.

Figure 10: Confidence in EU institutions in 2017



Source: Eurostat, data extracted in February 2019.

Box 3

Water quality in the countries of the EU is improving

Indicators relating to aquatic environments are not available in all the EU countries. Because of these lacking data, it has not been possible to integrate these indicators into the data analysis. Nevertheless, there are several findings to be gained from the data available (*Table*).

Indicators relating to water and aquatic environment monitoring in 2017

Sustainable development goals	EU SDG indicators	Median Eastern and Southern Europe	Median Western and Northern Europe	France	UE 28
Goal 6 - Clean water and sanitation	Phosphate in rivers in 2014 (mg PO4 per litre)	0,049	0,045	0,043	**0,068**[1]
	Nitrate in groundwater in 2012 (mg NO3 per litre)	20,4	20,2	17,6	**19,1**[2]
Goal 14 - Life below water	Bathing sites with excellent water quality (as % of coastal water)	90,5	80,0	80,0	**86,3**[3]
	Bathing sites with excellent water quality(as % of inland water)	70,8	88,9	74,3	**82,1**[4]

Source: Eurostat, data extracted in February 2019.

1. Data not available for 8 countries
2. Data not available for 7 countries
3. Not relevant for 4 countries
4. Not relevant for 3 countries

In terms of water, emphasis is placed on monitoring biological quality and combating pollution associated with intensification of agriculture, shortcomings in the treatment of household and industrial wastewater, and accidental contamination.

The concentration of phosphate in French rivers has remained more or less stable since 2010 (0.04 mg/l), following a period of continuous reduction between 2000 and 2010 associated with various measures, including introducing phosphate-free detergents and improving wastewater treatment plants. This trend can be seen across the EU: the quality of surface water has been improving for a long time; however, it has plateaued, or even deteriorated in numerous countries over the last few years. In 2014, the extent of pollution varied between 0.01 mg/l in Finland to 0.17 mg/l in Belgium; half of the states in the EU have levels of less than 0.05.

The concentrations of nitrates in groundwater fell across Europe between 2005 and 2012, returning to the levels recorded in the early 2000s. In France, this rate has remained more or less stable over the last few years, at 17.6 mg/l in 2012, which is 10% less than the EU as a whole. The impact of the evolution of practices, in particular reduction in the use of nitrogen fertilisers in agriculture, will not be visible for a few years. Water contamination by nitrates has health consequences, as some of this water is consumed by the population. In areas that are particularly affected, contamination can be seen in coastal regions, which have experienced developments of green algae.

Bathing sites are regularly inspected to ensure the safety of their waters. In 2017, over 80% of European sites had excellent quality bathing water, with this proportion growing steadily since 2011. In France, this rate has also improved over the last few years by between 15 and 20 percentage points, reaching, in 2017, 80% at seawater sites and 74% at freshwater sites, respectively. The majority of countries that have coastal bathing sites on the Black Sea and the Baltic Sea, as well as the United Kingdom, are significantly below the European average.

5. Conclusion

As underlined by Kanbur *et al.* (2018), the measurement of economic performance and social progress faces the inevitable and enduring tension between the pull to broaden and expand indicators on the one hand, and the imperative to keep a relatively small number of top-level indicators on the other. Following the adoption of the SDGs in 2015, the definition by the UN of an extensive list of several hundreds of indicators (+many sub-indicators) to assess and monitor progress towards the Agenda 2030 represents a move in the first direction. In order to follow a better manageable number of indicators, Eurostat rather decided to adopt an alternative approach: it defined a smaller list of 100 indicators only (most of them being available each year and for each of the EU countries), which are used for the analysis conducted in this paper.

The results of the principal component and hierarchical cluster analyses conducted in this paper show that the differences between EU countries for SDG indicators lie mainly on economic and social dimensions (especially GDP and GDI/capita), and that the breakdown of the EU into two groups of countries which results from this analysis clearly distinguishes "rich" and "poor" countries**.** Although France is part of the first group of "rich countries", it is closest to the EU average for these indicators overall: poverty and income inequalities are relatively low and the life expectancy is among the highest in Europe; education is above the EU average but access to employment is still difficult; France has mixed results in terms of environment, as well of governance.

As the objective of the SDGs was to go beyond GDP, in order to encompass the different dimensions of sustainable development, further studies should try to analyze more in-depth the strong contribution of economic indicators to the differentiation between countries, as well as the overall lack of correlation of environmental indicators with the others. In this perspective, one should bear in mind that the EU list of indicators is a mixed bag of input, intermediate and outcome indicators (which is also the case of the UN list), a characteristic which should be taken into account into a comparative analysis. Last of all, while our paper focuses on a static picture of the situation of SDIs at the time of the study, it would also be relevant to adopt a dynamic approach, by measuring the indicators' trends, or their distance to the SDGs and their targets as the OECD did for its member countries (OECD, 2019). This would undoubtedly shed new light on the differentiation between indicators and countries.

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Annex 1: List of Sustainable Development Goals (SDGs)

In 2015, the United Nations General Assembly adopted 17 Sustainable Development Goals (SDGs). These universal objectives, to be met by 2030, cover the three dimensions of sustainable development: social, economic and environmental; they apply to all countries or all stakeholders.

- SDG 1: End poverty in all its forms everywhere.
- SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture.
- SDG 3: Ensure healthy lives and promote well-being for all at all ages.
- SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
- SDG 5: Achieve gender equality and empower all women and girls.
- SDG 6: Ensure availability and sustainable management of water and sanitation for all.
- SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all.
- SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
- SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
- SDG 10: Reduce inequality within and among countries.
- SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable.
- SDG 12: Ensure sustainable consumption and production patterns.
- SDG 13: Take urgent action to combat climate change and its impacts.
- SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
- SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
- SDG 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.
- SDG 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.

Annex 2: List of EU sustainable development indicators (2018)

Indicators for SDG 1 'No poverty', by sub-themes
Multidimensional poverty
People at risk of poverty or social exclusion (%)[1]
People at risk of income poverty after social transfers (%)[1]
Severely materially deprived people (%)[1]
People living in households with very low work intensity (%)
In work at-risk-of-poverty rate (%)
Basic needs
Population living in a dwelling with a leaking roof, damp walls, floors or foundation or rot in window frames or floor (%)
Self-reported unmet need for medical care (%) (*)
Population having neither a bath, nor a shower, nor indoor flushing toilet in their household (%) (*)
Population unable to keep home adequately warm (%) (*)
Overcrowding rate (%) (*)
Indicators for SDG 2 'Zero hunger', by sub-themes
Malnutrition
Obesity rate (%)
Sustainable agricultural production
Agricultural factor income per annual work unit (Euro) (AWU)[1]
Government support to agricultural research and development (Euro/cap.)
Area under organic farming (%)
Gross nitrogen balance on agricultural land (kg/ha)
Adverse impacts of agricultural production
Ammonia emissions from agriculture (kg/ha)
Nitrate in groundwater (mg NO_3/litre) (*)
Estimated soil erosion by water (%) (*)
Common farmland bird index (*)
Grassland butterfly index (*)
Indicators for SDG 3 'Good health and well-being', by sub-themes
Healthy lives
Life expectancy at birth (years)[1]
Share of people with good or very good perceived health (%)[1]
Health determinants
Smoking prevalence (%)[1]
Obesity rate (%) (*)
Population living in households considering that they suffer from noise (%) (*)
Exposure to air pollution by particulate matter (*)
Causes of death
Death rate due to chronic diseases (number/100 000)[1]
Death rate due to tuberculosis, HIV and hepatitis (number/100 000)
People killed in accidents at work (number/100 000 employees) (*)

People killed in road accidents (number/100 000 inhabitants) (*)
Access to healthcare
Self-reported unmet need for medical care (%)
Indicators for SDG 4 'Quality education', by sub-themes
Basic education
Early leavers from education and training (%)
Participation in early childhood education (%)
Underachievement in reading, maths and science (%)[1]
Young people neither in employment nor in education and training (%) (*)
Tertiary education
Tertiary educational attainment (%)[1]
Employment rate of recent graduates (%)[1]
Adult education
Adult participation in learning (%)[1]
Indicators for SDG 5 'Gender equality', by sub-themes
Gender-based violence
Physical and sexual violence to women experienced within 12 months prior to the interview (%)
Education
Gender gap for early leavers from education and training (%) (*)
Gender gap for tertiary educational attainment (%) (*)
Gender gap for employment rate of recent graduates (%) (*)
Employment
Gender pay gap in unadjusted form (%)
Gender employment gap (percentage points)[1]
Inactive population due to caring responsibilities (%)
Leadership positions
Seats held by women in national parliaments (%)[1]
Positions held by women in senior management (%)
Indicators for SDG 6 'Clean water and sanitation', by sub-themes
Sanitation
Population having neither a bath, nor a shower, nor indoor flushing toilet in their household (%)
Population connected to at least secondary wastewater treatment (%)
Water quality
Biochemical oxygen demand in rivers (mg O_2/litre)
Nitrate in groundwater (mg NO_3/litre)
Phosphate in rivers (mg PO_4/litre)
Freshwater bathing sites with excellent water quality (%) (*)
Water use efficiency
Water exploitation index (%)
Indicators for SDG 7 'Affordable and clean energy', by sub-themes
Energy consumption
Primary and final energy consumption (2005=100)

Final energy consumption in households per capita (kgoe)[1]
Energy productivity (PPS/kgoe)
Greenhouse gas emissions intensity of energy consumption (2000=100) (*)
Energy supply
Share of renewable energy in gross final energy consumption (%)
Energy dependence (%)
Access to affordable energy
Population unable to keep home adequately warm (%)[1]
Indicators for SDG 8 'Decent work and economic growth', by sub-themes
Sustainable economic growth
Real GDP per capita (average annual growth rate 2012-2017 in %)
Investment share of GDP (%)
Resource productivity (PPS/kg) (*)
Employment
Young people neither in employment nor in education and training (%)[1]
Employment rate (%)[1]
Long-term unemployment rate(%)[1]
Inactive population due to caring responsibilities (%) (*)
Decent work
People killed in accidents at work (number/100 000)
In work at-risk-of-poverty rate (%) (*)
Indicators for SDG 9 'Industry, innovation and infrastructure', by sub-themes
R&D and innovation
Gross domestic expenditure on R&D (%)[1]
Employment in high- and medium-high technology manufacturing sectors and knowledge intensive service sectors (%)[1]
R&D personnel (%)[1]
Patent applications to the European Patent Office (number per million inhabitants)[1]
Sustainable transport
Share of buses and trains in total passenger transport (%)
Share of rail and inland waterways activity in total freight transport (%)[1]
Average CO2 emissions per km from new passenger cars (*)
Indicators for changes in SDG 10 'Reduced inequalities', by sub-themes
Inequalities within countries
Inequality of income distribution (income quintile share ratio)
Income share of the bottom 40 % of the population (%)
Relative median at-risk-of-poverty gap (%)
People at risk of income poverty after social transfers (%) (*)
Inequalities between countries
Purchasing power adjusted GDP per capita (EU28=100)[1]
Adjusted gross disposable income of households per capita (EU28=100)[1]
EU financing to developing countries (%) *(*)*
EU imports from developing countries (%) *(*)*
Migration and social inclusion
Asylum applications (number per million inhabitants)

Indicators for SDG 11 'Sustainable cities and communities', by sub-themes
Quality of life in cities and communities
Overcrowding rate (%)[1]
Population living in households considering that they suffer from noise (%)
Exposure to air pollution by particulate matter[1]
Population living in a dwelling with a leaking roof, damp walls, floors or foundation or rot in window frames or floor (%) (*)
Population reporting occurrence of crime, violence or vandalism in their area (%) (*)
Sustainable transport
Difficulty in accessing public transport (%)
People killed in road accidents (number per 100 000)[1]
Share of busses and trains in total passenger transport (%) (*)
Adverse environmental impacts
Recycling rate of municipal waste (%)[1]
Population connected to at least secondary wastewater treatment (%) (*)
Artificial land cover per capita (*)
Indicators for SDG 12 'Responsible consumption and production', by sub-themes
Decoupling environmental impacts from economic growth
Consumption of toxic chemicals
Resource productivity (PPS/kg)
Average CO2 emissions per km from new passenger cars (g CO_2/km)
Energy productivity (PPS/kgoe) (*)
Energy consumption
Primary and final energy consumption (2005=100) (*)
Share of renewable energy in gross final energy consumption (%) (*)
Waste generation and management
Circular material use rate (%)
Generation of waste excluding major mineral wastes (kg/capita)
Recycling and landfill rate of waste excluding major mineral waste (%)
Indicators for SDG 13 'Climate action', by sub-themes
Climate mitigation
Greenhouse gas emissions (tonnes/capita)
Greenhouse gas emissions intensity of energy consumption (2000=100)
Primary and final energy consumption (2005=100) (*)
Share of renewable energy in gross final energy consumption (%) (*)
Average CO2 emissions per km from new passenger cars (g CO_2/km) (*)
Climate impacts
Mean near surface temperature deviation (°C)
Climate-related economic losses (Euro/capita)
Mean ocean acidity (pH value)(*)
Support to climate action
Contribution to the international 100bn USD commitment on climate related expending (Euro million)
Population covered by the Covenant of Mayors for Climate and Energy signatories (%)

Indicators for SDG 14 'Life below water', by sub-themes
Marine conservation
Surface of marine sites designated under Natura 2000 (km^2)
Sustainable fisheries
Estimated trends in fish stock biomass (2003=100)
Assessed fish stocks exceeding fishing mortality at maximum sustainable yield (%)
Ocean health
Freshwater & Seawater bathing sites with excellent water quality (%)[1]
Mean ocean acidity (pH value)
Indicators for SDG 15 'Life on land', by sub-themes
Ecosystem status
Share of forest area (%)
Biochemical oxygen demand in rivers (mg O_2/litre) (*)
Nitrate in groundwater (mg NO_3/litre) (*)
Phosphate in rivers (mg PO_4/litre) (*)
Land degradation
Artificial land cover per capita (m^2)
Estimated soil erosion by water (%)
Biodiversity
Surface of terrestrial sites designated under Natura 2000 (km^2)
Common bird index (2000=100)
Grassland butterfly index (2000=100)
Indicators for SDG 16 'Peace, justice and strong institutions', by sub-themes
Peace and personal security
Death rate due to homicide (number/100 000)[1]
Population reporting occurrence of crime, violence or vandalism in their area (%)
Physical and sexual violence to women experienced within 12 months prior to the interview (%) (*)
Access to justice
General government total expenditure on law courts (Euro/capita)[1]
Perceived independence of the justice system (%)[1]
Trust in institutions
Corruption Perceptions Index (score scale of 0 to 100)[1]
Population with confidence in EU institutions (%)[1]
Indicators for SDG 17 'Partnership for the goals', by sub-themes
Global partnership
Official development assistance as share of gross national income (%)[1]
EU financing to developing countries (billion Euro)
EU imports from developing countries (billion Euro)
Financial governance within the EU
General government gross debt (%)[1]
Shares of environmental and labour taxes in total tax revenues (%)

Source: Eurostat

[1]Indicators which are the best represented on plan constituted with the first and second axes of the principal component analysis.

Indicators used in multiple themes (so-called 'multi-purpose' indicators) are marked with an asterisk (*).

Indicators not included in our analysis are marked in italic gray (these are indicators for which only an aggregate for the whole of the European Union are available or for which missing data were too numerous to allow comparison between countries).

For further information: https://ec.europa.eu/eurostat/web/sdi/main-tables

Annex 3: Principal Component Analysis

		Axis 1			Axis 2		
	Distance Centre	Coord Var	Contrib.	CO2	Coord Var	Contrib.	CO2
Indicators for SDG 1 'No poverty'							
People at risk of poverty or social exclusion	**0.80**	0.79	2.48	**0.62**	0.11	0.10	0.01
People at risk of income poverty after social transfers	0.64	0.64	1.63	**0.41**	-0.03	0.01	0.00
Severely materially deprived people	**0.84**	0.83	**2.78**	**0.70**	0.06	0.03	0.00
People living in households with very low work intensity	0.42	-0.02	0.00	0.00	0.42	1.57	0.17
In work at-risk-of-poverty rate	0.57	0.52	1.07	**0.27**	0.23	0.49	0.05
Population living in a dwelling with a leaking roof…	0.24	0.21	0.18	0.04	0.12	0.13	0.01
Indicators for SDG 2 'Zero hunger'							
Obesity rate	0.19	0.03	0.00	0.00	-0.19	0.32	0.04
Agricultural factor income per annual work unit (AWU)	**0.80**	0.75	2.22	**0.56**	-0.29	0.78	0.09
Gov. support to agricultural research and development	0.52	0.52	1.06	**0.27**	0.07	0.04	0.00
Area under organic farming	0.46	0.20	0.15	0.04	0.41	1.54	**0.17**
Gross nitrogen balance on agricultural land	0.62	0.36	0.52	0.13	-0.51	2.31	**0.26**
Ammonia emissions from agriculture	0.66	-0.44	0.79	0.20	0.49	2.18	**0.24**
Indicators for SDG 3 'Good health and well-being'							
Life expectancy at birth	**0.89**	0.66	1.74	**0.44**	-0.60	**3.20**	0.36
Share of people with good or very good perceived health	**0.76**	0.38	0.58	0.14	-0.66	**3.86**	**0.43**
Smoking prevalence	**0.73**	0.72	2.08	**0.52**	0.11	0.10	0.01
Death rate due to chronic diseases	**0.86**	0.69	1.90	**0.48**	-0.52	2.38	0.27
Death rate due to tuberculosis. HIV and hepatitis	0.64	0.50	1.01	**0.25**	-0.40	1.45	0.16
Self-reported unmet need for medical care	0.48	0.37	0.54	0.14	-0.31	0.85	0.09

		Axis 1			Axis 2		
	Distance Centre	Coord Var	Contr.	CO2	Coord Var	Contr.	CO2
Indicators for SDG 4 'Quality education'							
Early leavers from education and training	0.35	0.26	0.27	0.07	0.23	0.49	0.05
Participation in early childhood education	0.47	0.44	0.78	0.20	0.16	0.24	0.03
Tertiary educational attainment	**0.71**	0.58	1.32	**0.33**	0.41	1.51	0.17
Underachievement in reading	0.55	0.54	1.17	0.29	-0.08	0.05	0.01
Underachievement in maths	0.64	0.57	1.31	**0.33**	0.29	0.76	0.08
Underachievement in science	**0.79**	0.70	1.97	**0.49**	0.37	1.20	0.13
Employment rate of recent graduates	0.63	0.52	1.06	0.27	0.36	1.15	0.13
Adult participation in learning	**0.84**	0.82	**2.67**	**0.67**	0.21	0.39	0.04
Indicators for SDG 5 'Gender equality'							
Physical and sexual violence to women…	0.49	-0.49	0.96	0.24	-0.02	0.01	0.00
Gender pay gap in unadjusted form	0.40	-0.20	0.17	0.04	-0.35	1.09	0.12
Gender employment gap	**0.70**	0.34	0.46	0.11	0.61	**3.32**	**0.37**
Inactive population due to caring responsibilities	0.46	0.42	0.71	0.18	0.17	0.27	0.03
Seats held by women in national parliaments	**0.68**	0.68	1.85	**0.47**	0.05	0.03	0.00
Positions held by women in senior management	0.53	0.53	1.11	**0.28**	-0.01	0.00	0.00
Indicators for SDG 6 'Clean water and sanitation'							
Population having neither a bath. nor a shower…	**0.70**	0.61	1.46	**0.37**	-0.36	1.17	0.13
Indicators for SDG 7 'Affordable and clean energy'							
Primary energy consumption	0.61	-0.26	0.28	0.07	-0.55	2.67	**0.30**
Final energy consumption	0.31	-0.09	0.03	0.01	-0.30	0.79	0.09
Final energy consumption in households per capita	**0.79**	-0.68	1.84	**0.46**	-0.41	1.51	0.17
Energy productivity	0.50	-0.09	0.03	0.01	0.49	2.19	0.24
Share of renewable energy in gross final energy consumption	0.61	0.06	0.01	0.00	0.61	**3.35**	**0.37**
Energy dependence	0.61	0.03	0.00	0.00	0.61	**3.30**	**0.37**
Population unable to keep home adequately warm	**0.71**	0.69	1.89	**0.47**	0.16	0.22	0.02

		Axis 1			Axis 2		
	Distance Centre	Coord Var	Contr.	CO2	Coord Var	Contr.	CO2
Indicators for SDG 8 'Decent work and economic growth'							
Real GDP per capita	0.45	-0.34	0.47	0.12	0.30	0.79	0.09
Investment share of GDP	0.41	0.33	0.43	0.11	0.24	0.52	0.06
Young people neither in employment nor in education…	**0.80**	0.70	1.98	**0.50**	0.37	1.23	0.14
Employment rate	**0.79**	0.54	1.18	0.30	0.58	2.98	**0.33**
Long-term unemployment rate	**0.67**	0.42	0.71	0.18	0.52	2.45	**0.27**
People killed in accidents at work	0.42	0.34	0.45	0.11	-0.25	0.56	0.06
Indicators for SDG 9 'Industry, innovation and infrastructure'							
Gross domestic expenditure on R&D	**0.83**	0.82	**2.67**	**0.67**	0.10	0.10	0.01
Employment in high- and medium-high technology… sectors	**0.89**	0.89	**3.15**	**0.79**	-0.10	0.09	0.01
R&D personnel	**0.88**	0.88	**3.08**	**0.77**	-0.02	0.00	0.00
Patent applications to the European Patent Office (EPO)	**0.86**	0.86	**2.92**	**0.73**	0.08	0.06	0.01
Share of buses and trains in total passenger transport	0.14	-0.10	0.04	0.01	0.09	0.07	0.01
Share of rail and inland waterways activity in total freight…	**0.77**	-0.28	0.32	0.08	0.71	**4.58**	**0.51**
Indicators for changes in SDG 10 'Reduced inequalities'							
Purchasing power adjusted GDP per capita	**0.74**	0.71	2.03	**0.51**	-0.19	0.34	0.04
Adjusted gross disposable income of households per capita	**0.91**	0.87	**3.00**	**0.75**	-0.27	0.64	0.07
Relative median at-risk-of-poverty gap	0.66	0.66	1.72	**0.43**	0.07	0.04	0.00
Inequality of income distribution	0.66	0.66	1.72	**0.43**	-0.02	0.00	0.00
Income share of the bottom 40 % of the population	0.61	0.61	1.48	**0.37**	-0.02	0.00	0.00
Asylum applications	0.61	0.10	0.04	0.01	-0.60	3.27	**0.36**
Indicators for SDG 11 'Sustainable cities and communities'							
Overcrowding rate	**0.81**	0.76	2.29	**0.57**	-0.29	0.78	0.09
Population living in households…suffer from noise	0.55	-0.33	0.43	0.11	0.44	1.74	**0.19**
Exposure to air pollution by particulate matter	**0.68**	0.67	1.78	**0.45**	0.13	0.16	0.02
Difficulty in accessing public transport	0.18	0.13	0.07	0.02	-0.12	0.12	0.01

		Axis 1			Axis 2		
	Distance Centre	Coord Var	Contr.	CO2	Coord Var	Contr.	CO2
People killed in road accidents	**0.85**	0.83	**2.77**	**0.69**	-0.18	0.30	0.03
Recycling rate of municipal waste	**0.70**	0.69	1.89	**0.47**	0.10	0.09	0.01
Indicators for SDG 12 'Responsible consumption and prod.'							
Resource productivity	**0.79**	0.47	0.90	0.22	-0.63	**3.62**	**0.40**
Average CO2 emissions per km from new passenger cars	0.62	0.19	0.15	0.04	-0.59	3.16	**0.35**
Circular material use rate	0.52	0.50	0.99	0.25	-0.16	0.24	0.03
Generation of waste excluding major mineral wastes	0.45	-0.14	0.08	0.02	-0.42	1.61	**0.18**
Indicators for SDG 13 'Climate action'							
Greenhouse gas emissions	0.44	-0.44	0.76	0.19	-0.05	0.02	0.00
Greenhouse gas emissions intensity of energy consumption	0.35	0.30	0.35	0.09	-0.19	0.32	0.04
Climate-related economic losses	0.60	-0.48	0.93	**0.23**	0.35	1.11	0.12
Contribution to the international commitment on climate…	0.50	0.48	0.92	0.23	-0.15	0.19	0.02
Population covered by the Covenant of Mayors for Climate…	0.10	-0.06	0.02	0.00	-0.08	0.06	0.01
Indicators for SDG 14 'Life below water'							
Freshwater bathing sites with excellent water quality	**0.67**	0.66	1.74	**0.44**	0.08	0.06	0.01
Indicators for SDG 15 'Life on land'							
Share of forest area	0.52	-0.16	0.11	0.03	0.49	2.19	**0.24**
Artificial land cover per capita	0.57	-0.27	0.30	0.07	-0.50	2.25	**0.25**
Estimated soil erosion by water	0.57	0.24	0.24	0.06	0.51	2.37	**0.26**
Indicators for SDG 16 'Peace. justice and strong institutions'							
Death rate due to homicide	**0.77**	0.38	0.57	0.14	-0.67	**4.04**	**0.45**
Population reporting occurrence of crime…	0.30	-0.04	0.01	0.00	0.30	0.78	0.09
General government total expenditure on law courts	**0.74**	0.71	2.03	**0.51**	-0.20	0.35	0.04
Perceived independence of the justice system	**0.76**	0.76	2.29	**0.57**	0.06	0.04	0.00
Corruption Perceptions Index	**0.93**	0.92	**3.36**	**0.84**	0.15	0.20	0.02
Population with confidence in EU institutions (Parliament)	0.53	0.36	0.51	0.13	0.39	1.39	0.16

		Axis 1			Axis 2		
	Distance Centre	Coord Var	Contr.	CO2	Coord Var	Contr.	CO2
Population with confidence in EU institutions (Commission)	**0.68**	0.49	0.95	**0.24**	0.47	1.97	0.22
Population with confidence in EU institutions (ECB)	0.57	0.37	0.54	0.14	0.44	1.73	0.19
Indicators for SDG 17 'Partnership for the goals'							
ODA as share of gross national income	**0.79**	0.79	**2.51**	**0.63**	0.02	0.00	0.00
General government gross debt	**0.70**	0.12	0.05	0.01	0.69	**4.30**	**0.48**
Shares of environmental and labour taxes in total tax rev.	0.51	-0.50	1.01	**0.25**	0.07	0.04	0.00

Source: Eurostat

-The 38 indicators which are the best represented on axes 1 and 2 (distance to the centre superior to 2/3) are in bold characters.

-The coordinates of each indicator on one axis (1 or 2) are equal to the correlation between this indicator and the corresponding axis.

-The 10 biggest contributing indicators to each component (axes 1 or 2) are in bold characters.

- The square cosinus (CO2) of an indicator on an axis (1 or 2) is in bold characters when the CO2 is the biggest on this axis for the indicator considered. The CO2 measures the quality of the representation of an indicator on an axis.

Annex 4: Hierarchical Cluster Analysis/ Statistics for EU28 and by country groupings

	Stat.	EU28	Eastern South. Europe	West. North. Europe
Indicators for SDG 1 'No poverty'				
People at risk of poverty or social exclusion[1]	Mean	-22.83	**-25.35**	**-18.94**
	SD	6.42	6.96	2.23
	V. Test	8.12	**-2.53**	**2.53**
People at risk of income poverty after social transf.[1]	Mean	-16.89	-18.18	-14.90
	SD	3.89	4.25	2.05
	V. Test	5.31	-2.14	2.14
Severely materially deprived people[1]	Mean	-7.76	-10.68	-3.25
	SD	6.64	7.06	1.33
	V. Test	11.06	-2.84	2.84
People living…with very low work intensity	Mean	-9.21	-8.66	-10.07
	SD	2.90	2.98	2.53
	V. Test	1.56	1.24	-1.24
In work at-risk-of-poverty rate	Mean	-8.46	-9.35	-7.08
	SD	3.27	3.27	2.75
	V. Test	3.38	-1.76	1.76
Population living in a dwelling with a leaking roof…	Mean	-14.48	-15.57	-12.78
	SD	5.92	6.60	4.13
	V. Test	1.45	-1.20	1.20
Indicators for SDG 2 'Zero hunger'				
Obesity rate	Mean	-16.89	-17.47	-15.98
	SD	3.33	3.81	2.11
	V. Test	1.30	-1.14	1.14
Agricultural factor income per annual work unit[1]	Mean	19867	12325	31523
	SD	12657	7180	10216
	V. Test	31.61	-3.85	3.85
Gov. support to agricultural research and dev.	Mean	5.34	3.49	8.20
	SD	4.46	2.11	5.51
	V. Test	9.41	-2.68	2.68
Area under organic farming	Mean	8.22	8.05	8.49
	SD	5.74	5.08	6.63
	V. Test	0.04	-0.20	0.20
Gross nitrogen balance on agricultural land	Mean	67.57	58.29	81.91
	SD	48.09	46.27	47.32
	V. Test	1.59	-1.25	1.25
Ammonia emissions from agriculture	Mean	-24.33	-20.49	-30.25
	SD	15.76	14.91	15.20
	V. Test	2.62	1.57	-1.57

	Stat.	EU28	Eastern South. Europe	West. North. Europe
Indicators for SDG 3 'Good Health and well-being'				
Life expectancy at birth[1]	Mean	80.09	**78.98**	**81.80**
	SD	2.70	2.95	0.51
	V. Test	9.11	**-2.65**	**2.65**
% of people with good/ very good perceived health[1]	Mean	67.15	**63.48**	**72.82**
	SD	10.01	10.80	4.69
	V. Test	6.81	**-2.37**	**2.37**
Smoking prevalence[1]	Mean	-25.71	**-28.82**	**-20.91**
	SD	6.55	3.94	6.87
	V. Test	13.88	**-3.07**	**3.07**
Death rate due to chronic diseases[1]	Mean	-137.2	**-160.1**	**-101.7**
	SD	50.95	53.52	10.33
	V. Test	11.89	**-2.91**	**2.91**
Death rate due to tuberculosis, HIV and hepatitis	Mean	-2.97	**-3.85**	**-1.61**
	SD	2.61	2.95	0.92
	V. Test	5.52	**-2.17**	**2.17**
Self-reported unmet need for medical care	Mean	-2.52	-3.21	-1.46
	SD	2.75	3.21	1.23
	V. Test	2.75	-1.61	1.61
Indicators for SDG 4 'Quality education'				
Early leavers from education and training	Mean	-9.41	-10.21	-8.18
	SD	3.96	4.78	1.47
	V. Test	1.74	-1.30	1.30
Tertiary educational attainment[1]	Mean	42.09	**39.14**	**46.65**
	SD	8.86	9.36	5.50
	V. Test	5.36	**-2.15**	**2.15**
Participation in early childhood education	Mean	92.54	**89.98**	**96.50**
	SD	6.49	6.72	3.41
	V. Test	8.25	**-2.55**	**2.55**
Underachievement in reading	Mean	-21.91	**-24.56**	**-17.82**
	SD	8.28	9.09	4.40
	V. Test	4.88	**-2.07**	**2.07**
Underachievement in maths	Mean	-23.91	**-27.03**	**-19.09**
	SD	8.26	8.81	3.93
	V. Test	7.35	**-2.44**	**2.44**
Underachievement in science[1]	Mean	-22.59	**-25.09**	**-18.71**
	SD	8.10	9.12	3.73
	V. Test	4.52	**-2.00**	**2.00**
Employment rate of recent graduates[1]	Mean	80.06	**76.94**	**84.89**
	SD	9.74	10.67	5.24
	V. Test	4.91	**-2.07**	**2.07**

	Stat.	EU28	Eastern South. Europe	West. North. Europe
Adult participation in learning[1]	Mean	11.32	**7.14**	**17.78**
	SD	7.64	4.03	7.41
	V. Test	22.39	**-3.53**	**3.53**
Indicators for SDG 5 'Gender equality'				
Physical and sexual violence to women…	Mean	-7.36	**-6.18**	**-9.18**
	SD	2.39	1.82	1.99
	V. Test	15.67	**3.19**	**-3.19**
Gender pay gap in unadjusted form	Mean	-13.98	-13.55	-14.65
	SD	5.35	5.48	5.08
	V. Test	0.27	0.52	-0.52
Gender employment gap[1]	Mean	-10.53	-12.15	-8.04
	SD	5.27	5.92	2.52
	V. Test	4.41	-1.98	1.98
Inactive population due to caring responsibilities	Mean	-21.28	**-24.24**	**-16.70**
	SD	8.85	7.08	9.35
	V. Test	5.45	**-2.16**	**2.16**
Seats held by women in national parliaments[1]	Mean	27.31	**22.87**	**34.17**
	SD	8.85	7.19	6.48
	V. Test	16.54	**-3.24**	**3.24**
Positions held by women in senior management	Mean	21.42	17.02	28.23
	SD	9.36	6.93	8.50
	V. Test	13.54	**-3.04**	**3.04**
Indicators for SDG 6 'Clean water and sanitation'				
Population having neither a bath, nor a shower…	Mean	-2.66	-4.25	-0.20
	SD	5.64	6.78	0.14
	V. Test	3.64	-1.82	1.82
Indicators for SDG 7 'Affordable and Clean Energy'				
Primary energy consumption	Mean	-91.48	-90.42	-93.13
	SD	8.50	9.89	5.31
	V. Test	0.65	0.81	-0.81
Final energy consumption	Mean	-95.36	-95.72	-94.80
	SD	9.22	11.25	4.48
	V. Test	0.06	-0.25	0.25
Final energy consumption in households per capita[1]	Mean	-558.6	**-462.7**	**-706.8**
	SD	181.18	146.12	119.93
	V. Test	19.85	**3.42**	**-3.42**
Energy productivity	Mean	-9.06	-8.78	-9.49
	SD	2.81	2.67	2.97
	V. Test	0.41	0.65	-0.65
% of renewable energy in gross final energy cons.	Mean	19.96	19.48	20.72
	SD	11.57	8.10	15.44
	V. Test	0.07	-0.27	0.27

	Stat.	EU28	Eastern South. Europe	West. North. Europe
Energy dependence	Mean	-55.17	-56.37	-53.32
	SD	23.96	25.14	21.89
	V. Test	0.10	-0.32	0.32
Population unable to keep home adequately warm[1]	Mean	-9.19	**-12.92**	**-3.43**
	SD	9.07	9.94	1.45
	V. Test	9.18	**-2.65**	**2.65**
Indicators for SDG 8 'Decent work and economic growth'				
Real GDP per capita	Mean	2.30	2.72	1.64
	SD	1.79	1.40	2.11
	V. Test	2.45	1.52	-1.52
Investment share of GDP	Mean	20.68	19.57	22.38
	SD	4.07	3.17	4.68
	V. Test	3.33	-1.75	1.75
Young people neither in employment…education…[1]	Mean	**-12.69**	**-14.61**	**-9.72**
	SD	4.50	4.41	2.63
	V. Test	10.24	**-2.76**	**2.76**
Employment rate[1]	Mean	72.53	**70.78**	**75.25**
	SD	5.38	5.50	3.83
	V. Test	5.13	**-2.11**	**2.11**
Long-term unemployment rate[1]	Mean	-3.38	-4.16	-2.16
	SD	2.87	3.38	0.95
	V. Test	3.39	-1.76	1.76
People killed in accidents at work	Mean	-2.38	-2.66	-1.96
	SD	1.33	1.06	1.58
	V. Test	1.83	-1.33	1.33
Indicators for SDG 9 'Industry, innovation and infrastructure'				
Gross domestic expenditure on R&D[1]	Mean	1.54	1.01	2.34
	SD	0.85	0.41	0.69
	V. Test	37.54	**-3.99**	**3.99**
Employment in high- and medium-high technology… sectors[1]	Mean	44.20	39.98	50.74
	SD	6.82	4.95	3.20
	V. Test	38.02	**-4.00**	**4.00**
R&D personnel[1]	Mean	1.13	0.80	1.64
	SD	0.49	0.29	0.23
	V. Test	62.04	**-4.36**	**4.36**
Patent applications to the European Patent Office[1]	Mean	82.88	20.54	179.22
	SD	90.11	17.83	69.93
	V. Test	73.84	**-4.47**	**4.47**
% of buses and trains in total passenger transport	Mean	18.18	18.75	17.29
	SD	4.33	5.08	2.55
	V. Test	0.72	0.85	-0.85
% of rail and inland waterways activity/total freight[1]	Mean	26.71	29.73	22.05
	SD	19.77	22.39	13.57
	V. Test	0.97	0.99	-0.99

	Stat.	EU28	Eastern South. Europe	West. North. Europe
Indicators for changes in SDG 10 'Reduced inequalities'				
Purchasing power adjusted GDP per capita[1]	Mean	29946.4	**22917.7**	**40809.1**
	SD	12151.2	3845.6	12595.1
	V. Test	27.84	**-3.74**	**3.74**
Adjusted gross disposable income of households per capita[1]	Mean	20113.8	**16655.8**	**25458.0**
	SD	5251.80	3084.96	2908.29
	V. Test	52.80	**-4.25**	**4.25**
Relative median at-risk-of-poverty gap	Mean	-22.49	**-24.54**	**-19.32**
	SD	5.46	5.84	2.55
	V. Test	7.25	**-2.43**	**2.43**
Inequality of income distribution	Mean	-4.96	**-5.35**	**-4.35**
	SD	1.21	1.36	0.51
	V. Test	5.06	**-2.10**	**2.10**
Income share of the bottom 40 % of the population	Mean	21.34	20.68	22.35
	SD	2.29	2.57	1.20
	V. Test	3.82	-1.86	1.86
Asylum applications	Mean	1305.5	1147.8	1549.1
	SD	1503.0	1723.3	1030.9
	V. Test	0.45	-0.68	0.68
Indicators for SDG 11 'Sustainable cities and communities'				
Overcrowding rate[1]	Mean	-18.28	**-25.29**	**-7.45**
	SD	14.87	15.16	3.74
	V. Test	13.62	**-3.05**	**3.05**
Population living in households…suffer from noise	Mean	-15.98	-14.68	-17.99
	SD	5.03	4.70	4.84
	V. Test	3.01	1.67	-1.67
Exposure to air pollution by particulate matter[1]	Mean	-13.93	**-16.41**	**-10.10**
	SD	5.20	4.86	2.86
	V. Test	14.05	**-3.08**	**3.08**
Difficulty in accessing public transport	Mean	-19.47	-19.86	-18.87
	SD	5.79	5.92	5.54
	V. Test	0.18	-0.43	0.43
People killed in road accidents[1]	Mean	-5.63	**-6.56**	**-4.18**
	SD	1.83	1.62	1.01
	V. Test	17.59	**-3.30**	**3.30**
Recycling rate of municipal waste[1]	Mean	37.32	**29.48**	**49.44**
	SD	14.51	12.36	7.61
	V. Test	21.38	**-3.49**	**3.49**
Indicators for SDG 12 'Responsible consumption and prod.'				
Resource productivity	Mean	1.94	**1.63**	**2.42**
	SD	0.87	0.74	0.85
	V. Test	6.31	**-2.30**	**2.30**

	Stat.	EU28	Eastern South. Europe	West. North. Europe
Average CO2 emiss./ km from new passenger cars	Mean	-119.2	-120.4	-117.3
	SD	7.60	7.81	6.82
	V. Test	1.11	-1.05	1.05
Circular material use rate	Mean	8.56	**6.14**	**12.31**
	SD	6.46	4.00	7.63
	V. Test	7.25	**-2.43**	**2.43**
Generation of waste excl. major mineral wastes	Mean	-1891.0	-1817.1	-2005.3
	SD	1572.63	1977.87	477.50
	V. Test	0.09	0.30	-0.30
Indicators for SDG 13 'Climate action'				
Greenhouse gas emissions	Mean	-9.22	-8.24	-10.74
	SD	3.27	2.59	3.62
	V. Test	4.19	1.94	-1.94
Greenhouse gas emissions intensity of energy cons.	Mean	-86.75	-87.77	-85.16
	SD	9.21	10.28	6.97
	V. Test	0.51	-0.72	0.72
Climate-related economic losses	Mean	-704.50	**-518.88**	**-991.36**
	SD	450.36	285.06	505.13
	V. Test	9.26	**2.66**	**-2.66**
Contribution to the international 100 bn USD commitment on climate related expending	Mean	19.90	**1.43**	**48.45**
	SD	43.43	3.07	58.69
	V. Test	10.09	**-2.75**	**2.75**
Population covered by the Covenant of Mayors for Climate and Energy signatories	Mean	32.58	31.06	34.92
	SD	23.24	25.35	19.31
	V. Test	0.17	-0.42	0.42
Indicators for SDG 14 'Life below water'				
Freshwater bathing sites with excellent water quality[1]	Mean	70.78	**61.39**	**85.29**
	SD	23.81	25.40	9.94
	V. Test	8.22	**-2.55**	**2.55**
Indicators for SDG 15 'Life on land'				
Share of forest area	Mean	38.95	41.79	34.55
	SD	15.55	12.07	18.93
	V. Test	1.42	1.18	-1.18
Artificial land cover per capita	Mean	-434.89	-403.38	-483.60
	SD	177.74	137.41	217.55
	V. Test	1.33	1.15	-1.15
Estimated soil erosion by water	Mean	-5.00	-6.55	-2.61
	SD	6.20	6.68	4.39
	V. Test	2.78	-1.61	1.61

	Stat.	EU28	Eastern South. Europe	West. North. Europe
Indicators for SDG 16 'Peace, justice and strong institutions'				
Death rate due to homicide[1]	Mean	-1.22	-1.56	-0.71
	SD	1.13	1.33	0.32
	V. Test	4.05	-1.91	1.91
Population reporting occurrence of crime…	Mean	-11.07	-10.11	-12.55
	SD	4.41	4.85	3.11
	V. Test	2.05	1.40	-1.40
General gov. total expenditure on law courts[1]	Mean	83.90	**58.54**	**123.08**
	SD	41.63	18.01	37.16
	V. Test	34.93	**-3.93**	**3.93**
Perceived independence of the justice system[1]	Mean	54.57	**42.82**	**72.73**
	SD	17.64	10.43	9.02
	V. Test	56.57	**-4.30**	**4.30**
Corruption Perceptions Index[1]	Mean	64.64	54.82	79.82
	SD	13.79	7.06	5.25
	V. Test	94.32	**-4.60**	**4.60**
Pop. with confidence in EU institutions (EP)	Mean	49.61	**46.71**	**54.09**
	SD	9.22	7.35	10.00
	V. Test	4.70	**-2.03**	**2.03**
Pop. with confidence in EU institutions (Com.)[1]	Mean	44.04	**40.24**	**49.91**
	SD	10.68	7.34	12.26
	V. Test	6.33	**-2.30**	**2.30**
Pop. with confidence in EU institutions (ECB)	Mean	46.50	43.71	50.82
	SD	9.40	7.98	9.79
	V. Test	4.11	-1.92	1.92
Indicators for SDG 17 'Partnership for the goals'				
ODA as share of gross national income[1]	Mean	0.33	**0.17**	**0.59**
	SD	0.27	0.08	0.25
	V. Test	39.22	**-4.03**	**4.03**
General government gross debt[1]	Mean	-68.04	-69.83	-65.28
	SD	36.54	42.49	24.40
	V. Test	0.10	-0.32	0.32
Shares of environmental and labour taxes in total tax revenue	Mean	7.29	**8.02**	**6.16**
	SD	1.82	1.65	1.46
	V. Test	8.55	**2.59**	**-2.59**

Source: Eurostat

[1]Indicators which are the best represented on plan constituted with the first and second axes of the principal component analysis.

Indicators for which the mean for the first group of countries is significantly different from the mean for the second group of countries are marked in bold.

Mean: unweighted mean.

SD: standard value

V. Test: test of Fisher in the EU28 column and test of comparison of means in the other columns. When the value of the V. Test is superior or equal to 2, the means of the two groups are considered to be significantly different at a 5% significance level.

Annex 5: France's position in comparison with other EU countries for the main categories of indicators

Table 1: Indicators relating to poverty and inequality in 2017

Sustainable development goals	EU SDG indicators	Median Eastern and Southern Europe	Median Western and Northern Europe	France	UE 28
Goal 1 - No poverty	People at risk of poverty or social exclusion (% of population)	25,6	18,1	**17,1**	**22,4**
	People at risk of income poverty after social transfers[1] (% of population)	20,0	15,6	**13,3**	**16,9**
	Severely materially deprived people (% of population)	10,1	3,4	**4,1**	**6,6**
	People living in households with very low work intensity (% of population aged less than 60)	7,8	9,5	**8,1**	**9,5**
	In work at-risk-of-poverty rate (% of employed persons aged 18 or over)	9,3	6,9	**7,4**	**9,4**
Goal 7 - Affordable and clean energy	Population unable to keep home adequately warm[1] (% of population)	8,0	2,7	**4,9**	**7,8**
Goal 8 - Decent work and economic growth	Growth rate per capita[2] (%, annual average 2012-2017)	2,8	1,2	**0,8**	**1,5**
Goal 10 - Reduced inequalities	Real GDP per capita (Chain linked volumes (2010), euro per capita)	23 000	37 100	**31 100**	**30 000**
	Adjusted gross disposable income of households per capita (PPS (current prices))	16 652	24 696	**25 022**	**22 151**
	Relative median at-risk-of-poverty gap[1] (% distance to poverty threshold)	26,0	20,1	**16,9**	**24,1**
	Income distribution[1] (Income quintile share ratio)	5,4	4,3	**4,4**	**5,1**
	Income share of the bottom 40 % of the population[2] (% of income)	19,9	22,5	**22,5**	**21,1**
Goal 11 - Sustainable cities and communitie	Overcrowding rate[2] (% of population)	27,1	7,2	**7,7**	**15,7**

[1] Indicator retained by the CNIS for monitoring the SDGs in France

[2] Indicator similar to the one retained by the CNIS for monitoring the SDGs in France

Source: Eurostat, data extracted in February 2019.

Table 2: Indicators relating to health in 2017

Sustainable development goals	EU SDG indicators	Median Eastern and Southern Europe	Median Western and Northern Europe	France	UE 28
Goal 2 - Zero hunger	Obesity rate by body mass index (BMI)[2] in 2014 (% of population aged 18 or over)	17,3	15,3	**15,3**	**15,9**
Goal 3 - Good health and well-being	Life expectancy at birth[1] (years)	78,4	81,7	**82,7**	**80,9**
	Share of people with good or very good perceived health (% of population aged 16 or over)	65,3	71,3	**67,4**	**69,7**
	Smoking prevalence[2] (% of population aged 15 or over)	28	19	**36**	**26**
	Death rate due to chronic diseases in 2015 (number per 100 000 persons aged less than 65)	157,6	104,2	**104,2**	**122,1**
	Death rate due to tuberculosis, HIV and hepatitis in 2015 (number per 100 000 persons)	2,8	1,4	**2,1**	**2,9**
Goal 8 - Decent work and economic growth	People killed in accidents at work[2] in 2016 (number per 100 000 employees)	2,1	1,4	**2,7**	**1,7**
Goal 11 - Sustainable cities and communitie	People killed in road accidents[1] in 2016 (number per 100 000 persons)	6,2	3,9	**5,2**	**5,0**

[1] Indicator retained by the CNIS for monitoring the SDGs in France

[2] Indicator similar to the one retained by the CNIS for monitoring the SDGs in France

Source: Eurostat, data extracted in February 2019.

Table 3: Indicators relating to education and employment in 2017

Sustainable development goals	EU SDG indicators	Median Eastern and Southern Europe	Median Western and Northern Europe	France	UE 28
Goal 4 – Quality education	Early leavers from education and training by sex[1] (% of population aged 18 to 24)	9,3	8,2	**8,9**	**10,6**
	Tertiary educational attainment (% of population aged 30 to 34)	34,3	47,9	**44,3**	**39,9**
	Participation in early childhood education in 2016 (% of the age group between 4-years-old and the starting age of compulsory education)	91,4	97,1	**100,0**	**95,3**
	Underachievement in 2015 in :				
	- reading[1] (% of 15-year-old students)	22,0	18,1	**21,5**	**19,7**
	- maths[1] (% of 15-year-old students)	25,4	20,1	**23,5**	**22,2**
	- science (% of 15-year-old students)	24,6	18,5	**22,1**	**20,6**
	Employment rates of recent graduates (% of population aged 20 to 34 with at least upper-secondary education)	80,7	86,6	**74,4**	**80,2**
	Adult participation in learning[2] (% of population aged 25 to 64)	6,9	17,2	**18,7**	**10,9**
Goal 5 – Gender equality	Gender employment gap (percentage points)	9,5	7,9	**7,9**	**11,5**
	Inactive women due to caring responsibilities (% of inactive population aged 20 to 64)	34,0	24,6	**18,3**	**31,0**
Goal 8 - Decent work and economic growth	Young people neither in employment nor in education and training[1] (% of population aged 15 to 29)	13,3	9,1	**13,9**	**13,4**
	Employment rate[2] (% of population aged 20 to 64)	71,3	75,4	**71,0**	**72,2**
	Long-term unemployment rate (% of active population)	3,3	1,9	**4,2**	**3,4**

[1] Indicator retained by the CNIS for monitoring the SDGs in France

[2] Indicator similar to the one retained by the CNIS for monitoring the SDGs in France

Source: Eurostat, data extracted in February 2019.

Table 4: Indicators relating to environment and energy in 2016

Sustainable development goals	EU SDG indicators	Median Eastern and Southern Europe	Median Western and Northern Europe	France	UE 28
Goal 2 - Zero hunger	Area under organic farming[1] in 2017 % of utilised agricultural area)	8,0	6,3	**6,0**	**7,0**
	Ammonia emissions from agriculture (kg per hectare utilised agricultural area)	15,1	26,0	**20,3**	**20,2**
Goal 7 - Affordable and clean energy	Primary energy consumption[2] (index, 2005 = 100)	88,9	94,2	**90,5**	**90,0**
	Final energy consumption[1] (index, 2005 = 100)	94,9	93,2	**91,5**	**92,8**
	Final energy consumption in households per capita (kg of oil equivalent)	502	718	**596**	**558**
	Energy import dependency (% of imports in total energy consumption)	55,6	47,1	**47,1**	**53,6**
	Energy productivity (euro per kg of oil equivalent.)	4,9	9,0	**8,5**	**8,5**
	Share of renewable energy in gross final energy consumption[1] (%)	17,4	14,8	**16,0**	**17,0**
Goal 9 - Industry, innovation and infrasructure	Share of busses and trains in total passenger transport[2] (% of total inland passenger-km)	18,4	17,5	**18,5**	**17,1**
	Share of rail and inland waterways in total freight transport[2] (% of total inland freight tonne-km)	33,3	26,9	**13,7**	**23,6**
Goal 11 - Sustainable cities and communities	Difficulty in accessing public transport high or very high in 2012 (% of population)	19,0	18,7	**12,5**	**20,4**
	Recycling rate of municipal waste[1] in 2017 (% of total waste generated)	29,8	47,6	**42,9**	**46,4**
	Exposure to air pollution by fine particulates (< 2.5µm)[2] in 2017 (µg/m³)	18,7	11,2	**12,0**	**14,1**
Goal 13 – Climate action	Greenhouse gas emissions (tonnes per capita)	7,3	10,8	**7,1**	**8,7**
Goal 15 - Life on land	Share of forest area[1] in 2015 (% of total land area)	39,7	31,0	**31,0**	**41,7**
	Artificial land cover[2] in 2015 (per capita in m²)	384	448	**456**	**363**

[1] Indicator retained by the CNIS for monitoring the SDGs in France

[2] Indicator similar to the one retained by the CNIS for monitoring the SDGs in France

Source: Eurostat, data extracted in February 2019.

Table 5: Indicators relating to governance in 2017

Sustainable development goals	EU SDG indicators	Median Eastern and Southern Europe	Median Western and Northern Europe	France	UE 28
Goal 16 - Peace, justice and strong institutions	Death rate due to homicide[1] in 2015 (number per 100 000 persons)	0,9	0,6	**0,5**	**0,7**
	Population reporting occurrence of crime, violence or vandalism in their area (% of population)	8,2	12,4	**13,9**	**12,0**
	General government total expenditure on law courts (euro per capita)	54,7	119,1	**78,8**	**99,5**
	Perceived independence of the justice system - Very good or fairly good (% of population)	48	74	**53**	**…**
	Corruption Perceptions Index (score scale of 0 "highly corrupt" to 100 "very clean")	57	82	**70**	**75**
	Population with confidence in EU institutions by institution :				
	- European Parliament (% of population)	47	58	**39**	**45**
	- European Central Bank (% of population)	41	52	**34**	**39**
	- European Commission (% of population)	45	56	**36**	**42**

[1] Indicator retained by the CNIS for monitoring the SDGs in France

Source: Eurostat, data extracted in February 2019.

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