Environmental Profile of Spain

2018

GOBIERNO
DE ESPAÑA

MINISTERIO
PARA LA TRANSICIÓN ECOLÓGICA

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Madrid, 2019

The Environmental Profile of Spain 2018 is a report prepared by the Directorate-General for Biodiversity and Environmental Quality (National Focal Point of the European Environment Agency in Spain) reporting to the Ministry for Ecological Transition. This annual series, which began with the Environmental Profile of Spain 2004, has the objective of making the details of the environmental situation in Spain accessible to the largest possible audience, providing readers with information broken down per autonomous community and in reference to the European Union.

The structure and contents of this version follow the guidelines arising from the last meeting held by the EIONET network, which clearly indicated the need to move towards more concise, reduced reports. It comprises a first section that includes the specific thematic analysis on the situation of environmental information. A second section covering four fields of knowledge comprising the environmental and sectoral topics on which the environmental information is structured with 70 indicators displayed in a synthetic way by means of a description sheet. The third section covers the Autonomous Communities and summarises, on one single page, certain basic socio-economic and environmental aspects, with special reference to the environmental reports and website links where readers can find the reference environmental information for each autonomous community. Section four includes four annexes that complete the contents and use of the document. Since the 2012 edition, the publication has been available to download and is available for mobile devices, formats that have been maintained this year.

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Environmental Profile of Spain 2018

Indicator-based Report

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PRESENTATION

Preparation of the Environmental Profile of Spain is one of the most important annual milestones for the Ministry for Ecological Transition. Its contents provide us with real data, inform us about the successful achievements of the management of the institutions and the initiatives and commitment of companies, social agents, and even society in general. It also provides us with information regarding those issues that still require our dedication, and which must become lines of action to be dealt with.

The Environmental Profile is a benchmark for progress towards the improvement of environmental quality, as it tackles several issues that must be horizontally considered as a whole, exclusively and as deeply as possible. The environment-related topics cannot be individualized, especially because most of the issues encountered are a result of the promotion and development of economic activities and these have a direct impact on health and social welfare issues. Besides, adopting a comprehensive approach is crucial, as most of the solutions to be adopted may specifically contribute to such socio-economic development, as they generate wealth and employment in many of our depopulated areas.

The structure and contents of this new version of the "Environmental Profile of Spain 2018" includes certain aspects that allow readers to keep in mind the potential for change our energy model offers within the European climate and energy goals; it also includes other new contents regarding environmental concepts classified under the concept of "Circular, low-carbon economy". Moreover, it maintains the usual contents for monitoring relevant agendas on water, climate, environmental management, natural environment and biodiversity, at land, coast and marine levels.

The draft National Integrated Energy and Climate Plan 2021-2030 (PNIEC) was prepared in 2018 and has been submitted to the European Commission. Climate change and renewable energies are among its objectives and targets. Its implementation will allow us to reach 42 % of renewable energies in the use of final energy, and 74 % of electricity generation in 2030 from renewable energies, to cut greenhouse emissions by 21 % with respect to 1990 levels, to improve the energy efficiency by 39.6 % and to reduce our dependence on external sources of energy. In this context, European regulations make it compulsory to prepare biannual progress reports. The Environmental Profile already includes said commitment in the form of indicators with the relevant variables, and it also offers a specific information paragraph called "Air and climate" which, in turn, is structured into two sections: "Atmospheric emissions and air quality" and "Energy and climate".

Another aspect set out in the PNIEC has to do with employment creation: its implementation may create 250,000 to 364,000 new jobs. Our Environmental Profile has also made progress in this sense, as it includes a specific indicator of "Environmental Employment" within the "Sustainability" section.

Beyond these specific new aspects, the ongoing evolution on which this report is based since its inception (inclusion of a chapter with information per autonomous community, preparation of versions for mobile devices, for example), the chapters of this 2018 version have been modified, considering the information structures used by the European Environment Agency to organise its information plans. Specifically, the 14 chapters of the report have been organised in four main sections: "Air and climate", "Nature", "Economic sectors" and "Sustainability".

Additionally, for ease of reading, the format of presentation of the report's indicators has been improved; these are now included in a very synthetic sheet with a reference to whether the indicator can contribute to the monitoring of the United Nations Sustainable Development Goals and those of the EU's 7th Environment Programme. Moreover, the methodological references for each indicator have been moved to a final appendix, in order to simplify the text.

I have confidence in the potential of the Environmental Profile and in its progressive improvement so that it continues to play a leading role in environmental communication and is established as a support tool in this transition process initiated last year. For this purpose we have some of the best means available, such as representatives of the EIONET Network and other supervisory staff and experts who are able to obtain and prepare the information contained in this report. To all of them, thank you very much for your contributions.

Teresa Ribera Rodríguez
Minister for the Ecological Transition

FOREWORD

Scientific evidence and the monitoring of environmental quality indicators have been vital in allowing us, as citizens, to ascertain the extent of the challenge that the ecological emergency represents, to adopt decisions that help tackle that challenge and to assess the solutions put forward by the different public administrations, social partners and other economic stakeholders.

This year, this need has become even more evident, as the young and the not so young have taken to the streets to demand action and honesty on the environmental crisis we face.

To offer the best environmental information possible, validated scientifically and transparently, is a responsibility that cannot be neglected by public administrations. It is a fundamental instrument of public debate and it is aslo key that all stakeholders, both public and private, implement strategies and actions to protect the environment.

The Environmental Profile of Spain 2018 is made with that purpose. Prepared with the same rigour as the sources it uses, all of which are official, this report traces a diagnosis of the environmental health of the country based on 70 indicators that show the developments in significant areas like air quality, water bodies, soil and natural spaces. It also offers statistical data on the emissions of gases associated with global warming, domestic and industrial energy consumption and valuable information on another key area for the ecological transition: mobility.

From this profile we can extract valuable information to progress towards a carbon-neutral economy by 2050, to offer clear solutions to problems such as the accumulation of plastic waste in our soil and water bodies and on our beaches; to improve the air we breathe, especially in the cities which require measures on traffic regulation, mobility, energy efficiency and improved habitability. And for the conservation of our natural capital and their sustainable management, and as a tool to generate employment and consolidate the population of rural areas.

Each indicator is described specifically in this report, detailing the sources of the data, the method of calculation, how it ties in with the United Nations Sustainable Development Goals and the 7th Environmental Action Programme of the European Union, as well as the degree of compliance in accordance with legislation in force.

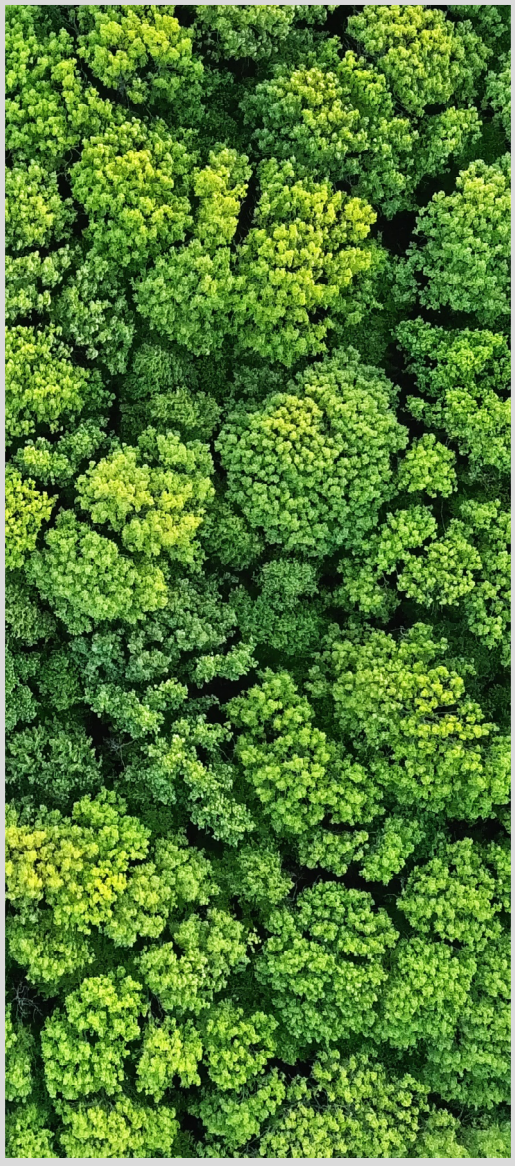
All of this is presented within an organized framework, in a single, structured document, with the best environmental information available, setting out both the advances made and setbacks suffered in environmental improvement. An instrument at the service of society at a time of great importance and one of ecological transition.

I would like to conclude by recognising the work of the National Focal Point of the European Environment Agency in Spain and its Environmental Information and Observation Network in the drafting of this report. Likewise that of the technical staff of the Administration and other entities that have collaborated on the report. Thanks to their knowledge and experience, their contributions add value to the report and ensure it has the best content possible.

Hugo Alfonso Morán Fernández
State Secretary for the Environment

1. THEMATIC ANALYSIS: EVALUATION OF ENVIRONMENTAL ASPECTS

- Environmental information


INTEGRATED ANALYSIS. ENVIRONMENTAL INFORMATION

1. What is environmental information?

Environmental information is understood as all information available in any format relating to the state of the elements that comprise the environment, external factors that may have an effect on same, such as administrative or political actions and measures that might alter said elements or information that refer to the state of health, security and life conditions of people that are or may be altered by the state of the elements of the environment.

Transparency and, specifically, access to public information have become central pillars of governance and public participation. It has been verified that those more developed companies are those that have implemented and consolidated systems of access to information, participation and environmental justice. These advanced systems allow for stronger institutions and a better informed society with a greater critical capacity to participate in decision making. Information relating to the environment is particularly relevant and crucial for ensuring its protection and contributing with compliance with international agreements in relation to sustainable development and climate change.

2. Regulatory framework and resulting obligations

The right of access to environmental information, established in application of the Aarhus Convention is regulated in Spanish legislation by Law 27/2006, of 18 July, incorporating EU Directives 2003/4/EC AND 2003/35/EC.

The Aarhus Convention constitutes a global commitment regarding access to information, public participation in decision making and access to justice in environmental matters. Guaranteeing these rights requires an open and transparent public administration. This way, citizens enjoy the right to access the environmental information possessed by public authorities.

AARHUS CONVENTION
for our environment

"In order to contribute to the protection of the right of every person of present and future generations to live in an environment adequate to his or her health and well-being, each Party shall guarantee the rights of access to information, public participation in decision-making, and access to justice in environmental matters in accordance with the provisions of this Convention."

(Article 1 of the Aarhus Convention)

[1] *According to Act 27/2006, of 18 July, regulating access rights to information, public participation and access to justice in matters relating to the environment (includes Directives 2003/4/EC and 2003/35/EC).*

INTEGRATED ANALYSIS. ENVIRONMENTAL INFORMATION

Law 27/2006 defines the thematic content of environmental information, regulates the terms and exceptions and imposes the obligation of the type of environmental information channel to be established by the public authorities. It also promotes the establishment of effective means of public participation.

Contributing to the right to maintain a healthy environment for future generations involves, at the same time, two types of differentiated rights: the right to seek and obtain information on the Public Administration and the right to receive relevant environmental information from the public authorities, facilitating citizen participation in decision making relating to environmental regulations, plans and programmes.

In addition to the provisions of Law 27/2006 as basic legislation, some autonomous communities have developed a more exacting regulatory framework in relation to access to environmental information. Specifically, from the year 2006 on, numerous pieces of environmental legislation were passed that incorporated, in one of its articles, aspects related to information and public participation.

Subsequently, there was significant development of this legislation with the adoption of *Law 19/2013, of 9 December, on transparency, access to public information and good governance*, a piece of legislation which supports Law 27/2006, on possible specific aspects of the procedure not contemplated in that Law.

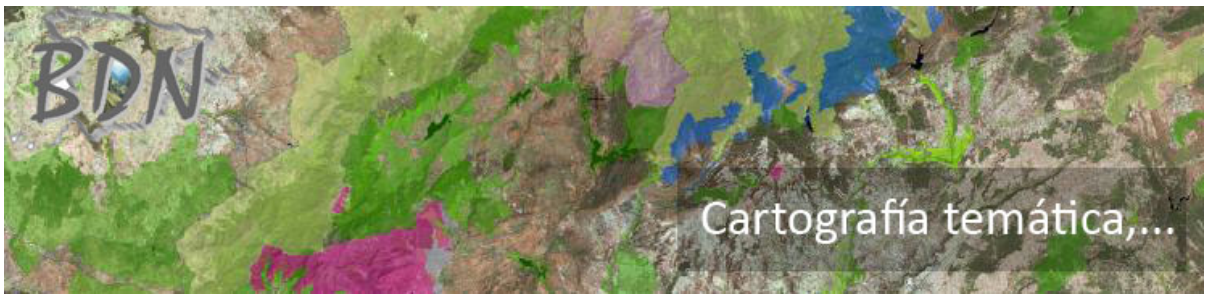
The environmental information legislation (Aarhus Convention - Directive 2003/4/EC and Law 27/2006) contain the specific regulation of the right to access the environmental information in the double facet of supply of assets and liability of the information.

In terms of access to environmental information on request, the unit responsible for managing environmental information within the Ministry for Ecological Transition (MITECO) is the Office of Environmental Information which belongs to the Technical Secretariat-General, in accordance with the functions attributed in *Royal Decree 864/2018, developing the basic organic structure of the Ministry of Ecological Transition*, and with the provisions of *Ministerial Order AAA/1601/2012, of 26 June, dictating instructions on the application in the Department of Law 27/2006.* Said functions consist, primarily, of public assistance to allow them access to information and recourse to justice for environmental matters and, internally, in the monitoring and coordination of the actions of the different bodies in compliance with the obligations arising from Law 27/2006.

3. Information systems and environmental mapping

> *Article 45 of the Constitution defines the environment as a legal asset which all citizens have a right to enjoy and whose conservation is a duty shared by the public authorities and society as a whole. In order to ensure that citizens, individually or collectively, can participate in this task of protection in a real and effective way, it is necessary to have the adequate means to do so. In this regard, participation in the public decision-making process is especially significant today.*

The public authorities, in compliance with the specific obligations on environmental dissemination arising from Law 27/2006, of 18 July, must organise and update the most important environmental information, using telecommunication information technologies and fostering the use of easily accessible electronic databases. In this sense, the General State Administration has a transversal environmental system. Specifically, within the website of the *Ministry of Ecological Transition* (MITECO) one can find an updated catalogue of legislation, map viewers, publications catalogue, reports and access to consultation and participation processes.



INTEGRATED ANALYSIS. ENVIRONMENTAL INFORMATION

Through the Nature Data Bank, any user can access the cartographic, alphanumeric, documentary and multimedia information available on the different components of the Inventario Español del Patrimonio Natural y de la Biodiversidad (Spanish Inventory of Natural Heritage and Biodiversity). MITECO'S Spatial Data Infrastructure portal (IDE) offers services for access to and consultation and analysis of geographic information for individuals and professionals in the sector, publishing maps related to issues such as the protection of natural heritage, the sea, water and biodiversity, among others. The different geographic viewers provide access to the maps published using the viewing and browsing tools, allowing users to interact with maps containing geographic information relating to the different areas of activity of the Ministry.

Another good example of a tool for accessing environmental information is the European Pollutant Release and Transfer Register which was established in *Regulation (EC) 166/2006, the E-PRTR*. It is regulated in Spain by *Royal Decree 508/2007, of 20 April, regulating the supply of emission data of the E-PRTR Regulation and Integrated Environmental Licenses*. The regulation to which this Register is subject falls within the framework of the Aarhus Convention and its UNECE/UN PRTR Protocol, to which Spain is a party.

Spain's PRTR makes information on air, water and soil emissions available to the public along with information on the transfer of waste from the almost 6,000 industrial facilities that carry out some form of activity contemplated in the European Regulation or Spanish legislation and that exceed the information thresholds established in said legislation.

Mapping information systems have proven truly revolutionary in terms of access to raw and geo-spatially processed information. With the development and implementation of new tools, from map viewers to Web Map Services (WMS), a flow of extremely valuable technical and scientific information is ensured for use in environmental management and monitoring studies and programmes.

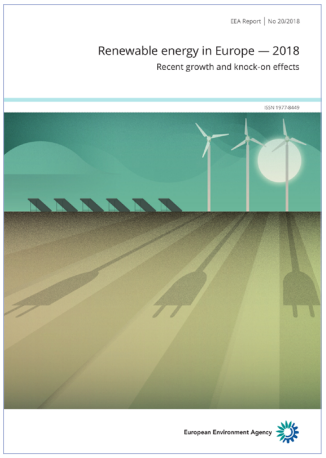
INTEGRATED ANALYSIS. ENVIRONMENTAL INFORMATION

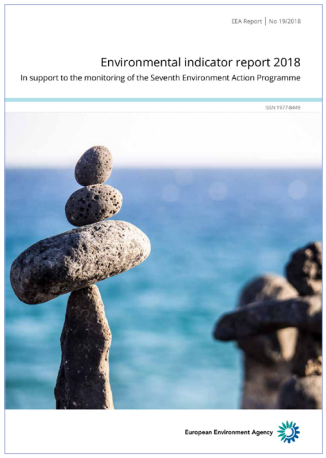
4. Environmental Reports

In accordance with the commitments assumed by signatory countries of the Aarhus Convention, the public authorities must draft and publish periodic reports on the state of the environment. These reports may have national, regional or, where applicable, local scope. The basic contents of same must include data on the quality of the environment and pressures affecting it and a summary in simple language for dissemination to both the general public and for managers.

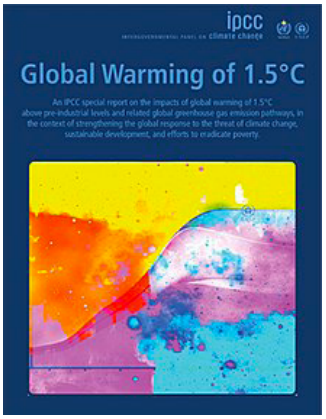
> *The dissemination of technical scientific data through periodic reports is a path of democratising knowledge on the state of the environment.*

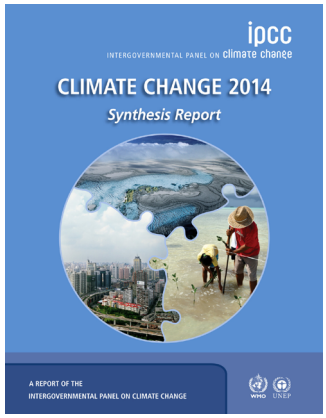
There are international institutions with a long history of publishing environmental reports, such as the United Nations *(United Nations Environment Programme and United Nations Development Programme), the Organisation for Economic Cooperation and Development (OECD), the European Environment Agency, the World Resources Institute, the World Watch Institute and the International Union for the Conservation of Nature (IUCN).* These organisations have been pioneers in environmental information dissemination, providing society with information that is of great utility when it comes to studying and drafting reports. The work of the European Environment Agency in particular must be highlighted, as the principal source of information for those responsible for the development, approval, execution and evaluation of environmental policies, and for society in general. For its part, Eurostat, the *European Union Statistical Office* and organisation of reference, publishes different indicators that comprise different European policies and plans, which include those related to the environment.





In the current context of climate change, we must highlight the role played by the *Intergovernmental Panel on Climate Change* (IPPC), created in 1988 to provide managers and authorities with rigorous and understandable scientific information on climate change on a periodic basis. Since 1988, the IPPC has seen five cycles of evaluation and five reports have been published. It is currently in its sixth cycle. The Panel has contributed to the production of more far-reaching scientific reports on the global level.





INTEGRATED ANALYSIS. ENVIRONMENTAL INFORMATION

There are also organisations that are not exclusively environmental in their mission, given the transversal nature of the environment itself, the publish reports that relate to the environment as part of their activity. Examples of such organisations include the *World Tourism Organisation* (UNWTO), which prepares thematic reports on the effect on of the environment on tourism and vice-versa, the *United Nations Educational, Scientific and Cultural Organization* (UNESCO), the *United Nations Food and Agriculture Organization* (FAO) and the *World Health Organisation* (WTO).

One Planet - Sustainable Tourism Programme committed to drive the change

Environmental assessment is essential to protect the environment and guarantee public participation. It facilitates the incorporation of sustainability criteria in strategic decision-making through the assessment of plans, programmes and projects.

With the aim of improving the management of environmental assessment and facilitating consultation for interested members of the public, Spain has developed the SABIA project (information system for the electronic processing environmental assessment procedures and the consultation of environmental assessment files), within the Ministry for Ecological Transition (MITECO) SABIA combines the databases of environmental assessment files from plans, programmes and projects, incorporating geographical information and creating an interface for electronic processing.

Although they are not exclusively concerned with the dissemination of scientific and technical data on the state of the environment, there are other reports relevant to environmental information, such as:

- National reports on compliance with the Aarhus Convention prepared by the National Focal Point of the Convention in Spain (Sub-directorate General for International Relations and Community Affairs) on legislative, regulatory and other measures adopted by Spain to comply with the Convention and their implementation:

  https://www.miteco.gob.es/es/ministerio/servicios/informacion/informacion-ambiental/informes-nacionales-de-cumplimiento/

- Statistical reports on the application in Spain of the Law on access to environmental information, compiled by the Environmental Information Office of the Ministry for Ecological Transition (eighth additional provision of Law 27/2006), which include information from the Public Administrations on access to environmental information on request and an abundance of data on the dissemination of environmental information under same:

  https://www.miteco.gob.es/es/ministerio/servicios/informacion/informacion-ambiental/informes-estadisticos/

5. Environmental information in autonomous communities

Since the ratification of the Aarhus Convention, the autonomous communities have made great progress in the area of access to environmental information for citizens as well as in relation to general participation in plans, programmes and legislation. With regard to the regulatory framework, inherent obligations have been incorporated with respect to the right to access information and the dissemination of environmental information.

Access to information, participation and access to justice in environmental matters. Government of the Basque Country 2009.

This document is aimed at all people who, in the public or private sector, are obliged by the requirements originally introduced by the Aarhus Convention. It is aimed at these parties to explain certain aspects of the Convention that may be difficult to interpret. This work aims to analyse the different questions posed by the dissemination of information, the right to access and participation in the ordinary activity of the public administrations.

INTEGRATED ANALYSIS. ENVIRONMENTAL INFORMATION

All autonomous communities have created a specific space for environmental information, although this space does not always provide the set of information necessary in a unified manner (legislation, process, mapping, databases, publications, etc.). Specifically, the mapping information is usually found in another space other than the environmental information system, whether it is a generic territorial information system or adhered to the Spatial Data Infrastructure. The existence of different viewers with environmental information, such as protected naturals spaces, water quality networks, etc.

Since the ratification of the Aarhus Convention, the autonomous communities have also integrated the drafting of reports on the state of the environment into their management. The reports drafted vary in form and content, as some use environmental or sustainability indicators, following the *European Environmental Agency's* recommendation on the use of indicators. In other cases, different methodologies are used to reveal the state of the environment by region. These are usually annual, although in the case of some autonomous communities there are gaps in the publication of these reports.

Environmental Report of Andalusia (IMA)

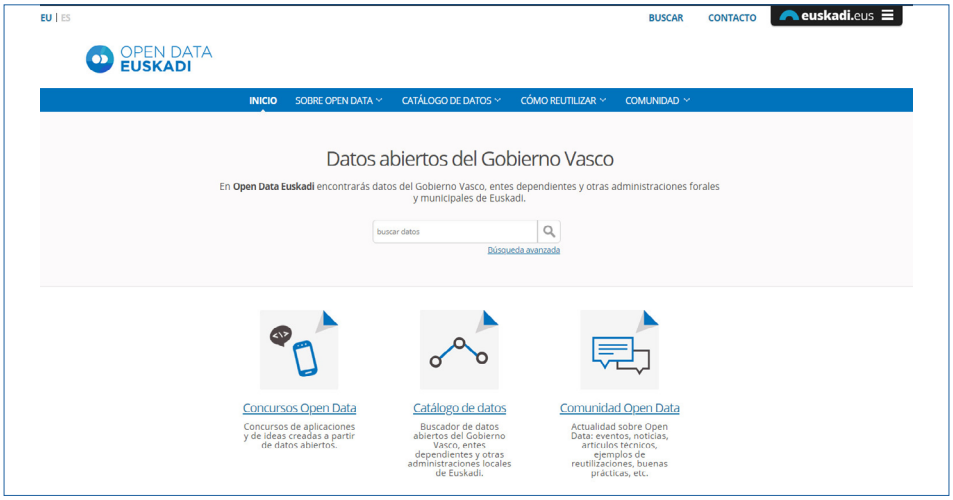
The series of annual reports on Andalusia complies with the 2017 edition of the IMA 30 years of environmental information on Andalusia.

Since 1987, the full report on the state of the environment in Andalusia has been made available to citizens, complying with the requirements of the applicable European (Directive 2003/4/EC), national (Law 27/2006) and regional (Law 7/2007) legislation, regulating the right of access to environmental information.

INTEGRATED ANALYSIS. ENVIRONMENTAL INFORMATION

The effort to establish different mechanisms of environmental dissemination is noteworthy, whether it be in the form of a bulletin, periodic journal, thematic publications section or the presence of the Public Administration on social media. In this regard, Facebook and Twitter are primarily used, with a significant presence of different YouTube channels. In the autonomous community of Cantabria, for example, the Documentation and Resources Center for Environmental Education in Cantabria (CEDREAC) runs a YouTube channel called Sinapsis Ambiental while also maintaining a presence on Facebook and Twitter along with the Programme for Environmental Education and Volunteering in Cantabria (PROVOCA) and the Local Sustainability Network of Cantabria (RLSC). This is also the case of the Regional Government of La Rioja which runs the Twitter profile @MAmbienteRioja. In other cases, there are generic Administration channels such as the case of the *Regional Government of Castile-La Mancha*.

Open data and open photographic archives are also used as efficient instruments for access to environmental information. Such is the case of Open Data Euskadi, the data platform of the Basque Government, its dependent bodies and other regional and municipal administrations of the Basque Country. On 29 December 2009, the Basque Government Council approved an order for the Directorate for Citizen Services, of the Department of Justice and Public Administration, to implement a public open data project. Open Data Euskadi collaborates actively with other public administrations in the promotion of open data and fostering of the reuse of information.



INTEGRATED ANALYSIS. ENVIRONMENTAL INFORMATION

The challenge that will be faced by the autonomous administrations in the future is to improve the user experience for those seeking information, given that it can vary greatly in comparative terms and in many cases the websites have an organic structure that makes it difficult to detect environmental data, without forgetting the need to develop an environmental communication strategy on social media that facilitates access to, and dissemination of, this information.

For the purpose of analysing the situation with regard to information in the autonomous communities, a practical exercise was completed, sending a questionnaire (May 2019) to the autonomous community focal points of the European Environment Information and Observation Network (Eionet). It included six main questions relating to aspects of the development of environmental information in their respective territorial scope as to whether they had implemented specific legislation, an environmental information and mapping system, an environmental documentation and environmental report centre or any other specific unit of dissemination. The results of the responses are summarised and presented in the following table.

SUMMARY OF INFORMATION COMPILED FROM THE QUESTIONNAIRE ON THE SITUATION OF THE ENVIRONMENTAL INFORMATION OF AUTONOMOUS COMMUNITIES

Is there specific legislation on environmental information in place in the autonomous community?

In addition to Law 27/2006, of 18 July, arising from the Aarhus convention, some autonomous communities have developed their own regulatory framework.

According to the questionnaires analysed, 6 autonomous communities specified the following on their specific legislation relating to the environmental information:

- Basque Country: *Law 3/1998, of 27 February, on the General Protection of the Environment of the Basque Country*, which incorporates some general aspects, but does not include any development of the basic national legislation on environmental protection.
- Aragón: Article 9 of *Law 11/2014 of 4 December, on Prevention and Environmental Protection of Aragón, deals with environmental information.*
- Andalusia: *Law 7/2007, of 9 July, on the Integrated Management of Environmental Quality and Decree 347/2011 of 22 November, regulating the structure and functioning of the Environmental Information Network of Andalusia and access to environmental information.*
- Castile and León: there are a number of different pieces of legislation regulating environmental information.
  - *Order PAT/370/2007, of 28 February, approving the Citizen Services Charter of the Centre of Environmental Information and Documentation. (BOCyL of 09-03-2007)*
  - *Order of 11 October 2002, of the Department of the Presidency and Territorial Administration, creating the Technical Commission for the Coordination of Mapping Information of the Administration of Castile and León.*
  - *Order of 11 October 2002, of the Department of the Presidency and Territorial Administration, creating the Technical Commission for the Coordination of Mapping Information of the Administration of Castile and León.*
- Navarre: *Regional Law 11/2012 on Transparency.*
- Valencia: *Decree 97/2010, of 11 June, of the Council, regulating the exercise of the right to environmental information and public participation in environmental matters in the autonomous community of Valencia.*

Is there an environmental information system in place?

All of the autonomous communities have an environmental information system, although the idea of a system varies somewhat between autonomous communities, with different perceptions of organisation. There is an environmental information channel in place in all the autonomous communities. In the vast majority of cases there is also a specific channel with reference to access to environmental information and the Aarhus Convention. Nevertheless, it is important to highlight that both channels cannot always be integrated and interconnected.

Is there an environmental mapping system in place?

All of the autonomous communities have mapping viewers, although many of them are not exclusively environmental and incorporate different environmental and territorial information and have Spatial Data Infrastructure. Access to the geospatial data and the web maps service is only in place in the minority of cases. The Environmental Information Network of Andalusia is an example of best practice as it develops a number of tools to make environmental mapping accessible to the general public, using Geographic Information Systems (viewers) and Web Map Services. Catalonia also offers a specific mapping base for the environment and sustainability.

Is there an environmental documentation centre in place? If so, is it part of the Network of Environmental Information and Documentation Centres (RECIDA)?

The environmental documentation centres have been created with the objective of improving access to environmental information, in this case in the scope of the autonomous communities, in order to comply with *Law 27/2006 of 18 July, regulating the right of access to information, public participation and justice in relation to environmental matters.*

11 of the 17 autonomous communities have environmental documentation centres linked to the Public Administration and all of these belong to the RECIDA network. The rest of the autonomous communities either do not have a centre of these characteristics or no conclusive information is available in this respect. Nevertheless all offer a service to channel and offer environmental information:

- Andalusia: Communication and Documentation Service, provided through the Library of the Regional Ministry of Agriculture, Livestock, Fisheries and Sustainable Development.
- Aragón Geographic Institute Aragón (IGEAR).
- Cantabria CEDREAC is a Documentation and Resources Centre for Environmental Education in Cantabria.
- Castile and León: Centre of Environmental Information and Documentation (CIDA).
- Catalonia: Centre of Environmental Documentation (CDMA).
- Extremadura: Library of the Centre of Agrarian Studies of the Regional Ministry of the Environment and Rural Affairs, Agrarian Policies and Territory
- Galicia: Centre for University Extension and Environmental Dissemination of Galicia (CEIDA).
- Madrid: Documentation Centre Specialised in Environment and Territorial Planning.
- Navarre: Specialist Library of the Department of Rural Development, the Environment and Local Administration.
- Basque Country: Ingurugela Centres and the Technical Office of the Urdaibai Biosphere Reserve.
- Valencia: Centre of Environmental Information and Documentation (CIDAM).

Is there an environmental dissemination framework in place?

Of the 17 autonomous communities, 15 have a framework for the dissemination of environmental information with different instruments (environmental reports, bulletins, use of social media, etc.) In particular:

- 10 of them have an environmental information bulletin.
- 12 autonomous communities have social media pages to provide information on environmental matters. The most commonly used social media sites are Twitter and Facebook, followed by YouTube.
- 15 autonomous communities publish reports on the state of the environment.
- 6 autonomous communities have some form of dissemination mechanism, which usually coincides with other types of thematic publications.

Environmental Reports

Of the 17 autonomous communities, 15 publish reports on the state of the environment in their territorial scope. Those that do not draft these reports have other kinds of periodic thematic publications (journals, bulletins, monographs, etc.). In Cantabria, a monthly series of videos is posted to the YouTube channel Sinapsis Ambiental.

In general, the name of the report is similar (state of the environment, environmental profile or environmental situation) and the vast majority are published annually. With regard to the contents, they are varied with some analysing specific environmental matters each year.

6. Dissemination of environmental information: the sources of environmental information

The public authorities have an obligation to disseminate environmental information and make it available to the public in the broadest and most systematic possible way. This constitutes the active side of the right to access to environmental information as the basis of the public administrations environmental protection actions.

In today's context with information technologies, the challenge is to organise a system of accessible, understandable and updated environmental information through different formats and levels of technical complexity.

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6.1 Documentation centres and libraries

Libraries and documentation centres specialising in the environment are responsible for compiling, organising and disseminating the information and documentation on this matter published in different formats. In the catalogues, there are references to many documents that are accessible to any interested citizen. Moreover, thanks to the internet, references can be geo-localised, interconnected and full documents can be accessed instantaneously, which makes access to the information and in many cases provided information of great interest.

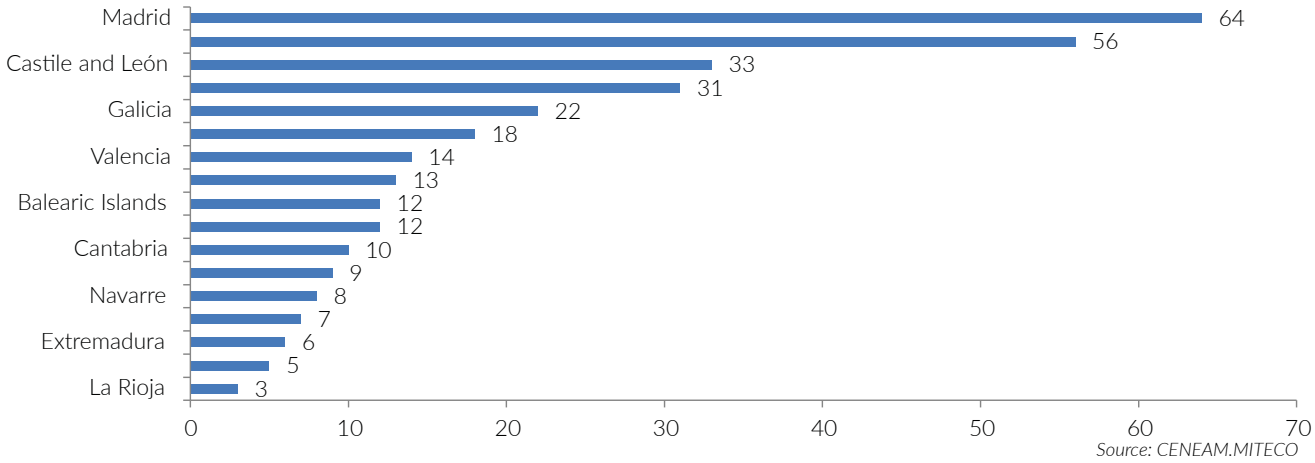
Environmental Information is a very broad concept that covers many aspects, produced and published by a range of stakeholders and channels. With these premises and faced with the difficulty of quickly finding quality sources and reliable information on the environment, in 1998 the National Environmental Education Centre (CENEAM) carried out a survey of the documentation centres and libraries in Spain, compiling information on this matter for the purpose of ascertaining the actual state of these centres and preparing a directory that could facilitate the work of professionals and users.

With the analysis of the data, it became evident that there were no channels for cooperation and coordination between the centres and there was a widespread lack of knowledge of their resources and services. The decision was therefore taken to prepare a Directory of Environmental Information and Documentation Centres of Spain which could be consulted by provinces on the CENEAM website.

INTEGRATED ANALYSIS. ENVIRONMENTAL INFORMATION

As of June 2019, 323 centres have been summarised, detailing their management, contact details, website, social media, membership of the *Network of Environmental Information and Documentation Centres* (RECIDA) and providing a photograph of their facilities, arranged by autonomous community as follows:

Environmental Information and Documentation Centres. Total Number of centres: 323. Data as of June 2019



Source: CENEAM.MITECO

Some of these documentation centres offer courses on environmental information or relating to this matter. We can highlight the course on environmental information and documentation which has been organised practically every year since 1997 by the CENEAM, as well as the courses of the CEIDA of Galicia or those of the CEDREAC in Cantabria.

Within the Ministry for Ecological Transition, the central body with competency for documentation and archives is the Centre of Environmental Documentation and General Environment Library of the Department, which has its origins in a library specialising in environmental matters created in Madrid in 1976, in the International Centre for Training in Environmental Sciences, a United Nations Environment Programme (UNEP) project.

It specialises in environmental information produced in Spain, in other countries and by international bodies. The centre has updated documentary bibliographic resources specialising in environmental information available to any user, external or internal, who wishes to use them.

6.2 The Network of Environmental Information and Documentation Centres (RECIDA)

The lack of coordination between environmental documentation centres and the lack of knowledge in all areas led to the need to create a form to meet and exchange ideas. Consequently, supported by *Order MAM/1973/2002, of 22 July, regulating the functions of the CENEAM*, which include the "*Organisation of, and support for meetings, seminars and other forums for reflection, debate and coordination in relation to environmental education*", in 2002, the Environmental Documentation Centres Seminar was launched within the framework of the Permanent Seminars of the Ministry initiated in 1999.

The Seminars Programme provides a stable space where professionals from different environmental sectors can meet and exchange ideas and experience and debate effective working methods and professional collaboration. It has facilitated the sharing of knowledge and better exploitation of resources, both public and private, applied to environmental matters in Spain. This programme also contributes to the objectives of the different international commitments and plans of the public administration in relation to the environment.

The annual Environmental Documentation Centres Seminar is organised with the technical collaboration of the La Garrotxa Volcanic Zone Natural Park of the Regional Government of Catalonia and the different institutions of the respective autonomous communities, when the seminar was held outside the facilities of the CENEAM in Valasín, Segovia. Of the 18 editions held, half were held in different autonomous communities. Navarre, Catalonia, Galicia, the Canary Islands, Andalusia, Castile and León, Aragón and Valencia, which has allowed for these centres to be discovered first hand, along with the other protected spaces which are generally close to, or connected to, these centres, and raising awareness of the services and sharing organisation work and costs.

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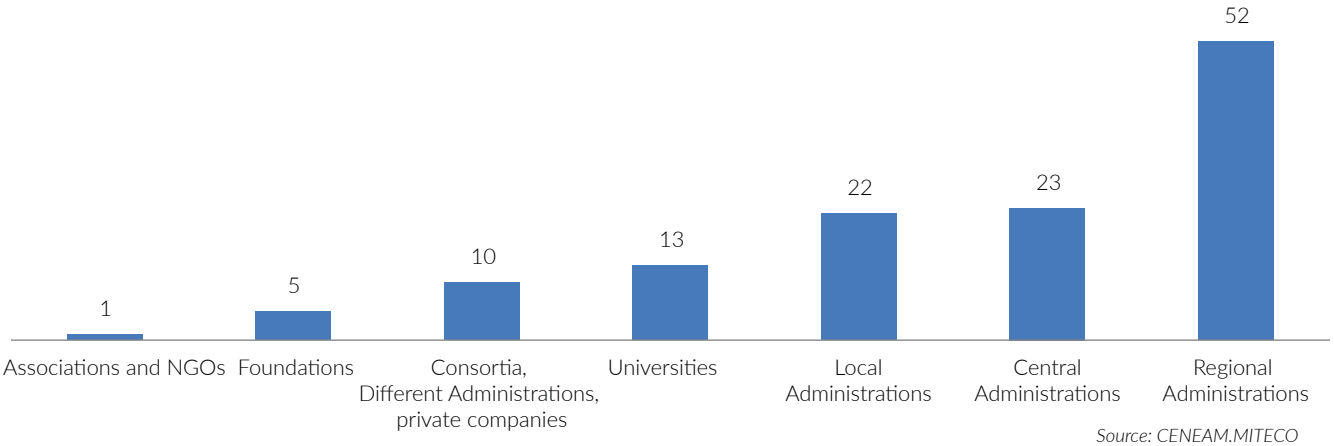
It was at this seminar that, in 2004, the idea of creating a network to facilitate permanent communication between environmental documentation centres and protected natural spaces first emerged. Today (July 2019), RECIDA has 126 centres in 17 autonomous communities, including national, regional, local, university and foundation bodies.

Member centres of the Network of Environmental Information and Documentation Centres (RECIDA)
Total Number of centres: 126. Data as of June 2019



Source: CENEAM.MITECO

The network has an advisory committee comprised of experts in documentation and protected spaces that resolve technical doubts, collaborate in training and provide advice on the use of new tools and resources. The main channel of communication of this network is through a RedIris list (*Academic and National Research Network*), that facilitates the exchange of publications, proposals, queries, etc. It also has a website, run by the University of Zaragoza, a Wikipedia page and Facebook, Twitter and WhatsApp accounts.

The network allows us discover the potential of the centres and the professionals who lead them, facilitating a relationship between professionals that optimises and multiplies the resources of each centre and greatly improves the services to users, thus complying with the Aarhus Convention and all legislation on environmental information. It improves the sharing and exchange of procedures and documents and the common implementation of standards facilitates day-to-day work, training, inter-library loans, collaboration on common projects, presentations at international and national congresses (IFLA, CONAMA, FESABID) assistance for research and dissemination of knowledge, serving as a bridge between specialists and the local population, etc. Its development has served as an inspiration for other networks on other geographic areas, such as the DocAmbCat network of Catalonia.

In 2019 they have jointly worked on the Sustainable Development Goals, designing a poster and a document on the specific actions of each centre.

Ultimately it is a major network with remarkable differences between the centres but with a common objective: to increase and improve services for users.

6.3 The role of the media and professional associations

Environmental communication is a very powerful tool for transforming society. The dissemination function of the environmental media is central to raising awareness among citizens, and this awareness is necessary not only to change our consumption habits but also to ensure that we are capable of demanding real action in the interest of the planet from the public authorities.

According to the technical report "*Hacia una Educación para la Sostenibilidad. 20 años después del Libro Blanco de la Educación Ambiental en España (2019)*", the media can contribute to compliance with obligations established in the Aarhus Convention, serving as information channels for citizens. Specifically, in the section dealing with the transfer of relevant information from the environmental perspective it is when the media play a key role in communicating current environmental affairs to society.

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The integration of communication measures in the educational processes must be considered an integral and indispensable part of the ecological transition of any country.

To fulfil this (educational) function, media outlets must overcome the classic dangers of journalistic coverage of the environment such as, for example, the omission, catastrophism or sensationalism, politicisation or superficiality, while at the same time they must develop a more profound, rigorous, documented, compared, contextualised and honest journalism with a public service vocation."

María José Picó. Journalist

The complexity of the digital world is a reflection of the society in which we live, where veracity in the use of information is often inadequate. For this reason organisation such as the Internet Governance Forum (IGF Spain), exist which tackles the ethical questions of the development of a digital society.

"Internet governance is the development and application by governments, the private sector and civil society, within the scope of their competency, of principles, standards, rules and procedures of the adoption of decisions and common programmes that configure the evolution and use of the internet."

The Association of Environmental Information Journalists (APIA) celebrates 25 years.

The evidence of the deterioration of the natural environment and the first ecological movements in Spain that emerged in the 1970s led to the creation of environmental journalism. This year marks 25 years from the creation of the Asociación de Periodistas de Información Ambiental (APIA), an organisation of professionals from all sectors of information and communication that work to reach society and their own profession, with critical, rigorous and educational information so that it generates and impact and is not relegated to a secondary notice. The APIA is committed to a well-informed society in all aspects, emphasising a journalism that is committed to a sustainable future.

"Little by little, environmental news has come to occupy the space it deserves in the media, although it is not yet ideal. It now occupies the front pages and leads news reports. The climate emergency has awoken consciences and has put what have many professionals have been writing for many decades on the front pages of many daily newspapers and this is a welcome development. Environmental journalism is not filler, it is Information with a capital "I".

María García de la Fuente. President of the APIA

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EFE Verde, leading environmental journalism platform.

EFEverde is the leading platform in environmental journalism and environmental information and sustainability in the Latin American sphere, as well as constituting a meeting point for companies, institutions, NGOs and, ultimately, all stakeholders involved or interested in environmental information and the health of the planet.

The EFE Agency is a pioneer in environmental information in Spain. It was the first media outlet to create a science and environment section with the same status as the rest of the news areas and the only one that has maintained the same form for more than 15 years. The work of EFE Verde has thus contributed to greater information and raising awareness of the environment and has exported this experience to other media outlets in Spain.

From Climate Change to the Climate Emergency or Crisis

An initiative of EFEverde, and the *Fundación del Español Urgente* (Fundéu BBVA), aims to review, in a critical and constructive manner, the language used in news reports referring to climate change in order to the communicate better with society and transmit the real and complex nature of this environmental problem. The initiative emerged from different international communication agencies and scientific studies that question whether or not the concept of climate change has truly reached society.

In this respect, in June 2019, Fundéu and EFEverde put together and expert group to analyse the language used by media to report on the environmental situation and specifically the climate crisis. Those participating include, among others, experts from MITECO, the Spanish Office for Climate Change and university research centres. The objective is to put forward proposals that offer journalists tools which enable them to report the climate situation more clearly and efficiently.

Another initiative worth highlighting has been developed by the Ecological and Development Foundation (ECODES), with the support of the European Climate Change Foundation and the collaboration of the Dialectical Mediation of Social Communication Research Group (MDCS) of the Complutense University of Madrid, and which has been translated into the 10 recommendations for reporting on climate change. The objective is to contribute to the improvement of journalistic work and social communication adopted by the different media in relation to this matter.

Similarly, Fundación MAPFRE prepared a publication titled *La sociedad ante el cambio climático: conocimientos, valoraciones y comportamientos en la población española 2011*[2] .

The content is intended to help those dedicated to drafting and developing materials, programs and communication and education actions on this issue so that they take into account social representations on climate change and barriers to knowledge and the valuation and the action that are made evident in the development thereof. It attempts to ascertain the extent to which Spaniards are willing to change their lifestyle habits to reduce the CO_2 emissions that cause climate change. Thus, it can service as a guide to public decision makers in the adoption of measures geared towards the decarbonisation of society, starting with more accurate knowledge of potential citizen support.

EFE: VERDE

EFEverde, the environmental information platform of the EFE Agency, and the Fundación del Español Urgente (Fundéu BBVA) will review the language used in news stories on climate change and make proposals so that reports on the issue help people understood the true dimension of the issue.

"EFE has been committed to environmental information for many years and with this initiative, together with Fundéu, redoubles its commitment to public service information" which was set out in the 2009 edition of the First Guide for journalists on climate change and international negotiation.

Arturo Larena. Director de EFEverde

[2] *Meira Cartea, P.A., Arto Blanco, M., Heras Hernández, F., Montero Souto, P.(2011). La sociedad ante el cambio climático: conocimientos, valoraciones y comportamientos en la población española. Madrid: Fundación MAPFRE.*

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Other important documents for the issue of environmental communication that may be taken into consideration are the following:

- *La adaptación al cambio climático en la prensa española: análisis del tratamiento mediático de la adaptación al cambio climático en España (2012-2016)*[3]
- *Comunicación para la sostenibilidad : el cambio climático en los medios*[4]

Case Study: Contribution of the Environmental Sciences Association (ACA) to the right to environmental information

The *Environmental Sciences Association* (ACA) is an organisation comprised of professionals, scientists and specialists from different disciplines concerned about and involved in the study of, communication and the resolution of environmental problems from a multidisciplinary perspective.

Created in 1997, the ACA arose to attempt to advance in the analysis of the sustainable development challenges, proposing projects that bring solutions to society and acting decisively in their communication. Among the specific objectives are the design of innovative communication campaigns and to acts as a catalyst for initiatives and projects that allow citizen participation.

The fruit of the continued work has received numerous prizes in relation to social innovation and communication. It has also worked on publishing thematic reports on the quality of environmental information in Spain and, as a pioneering entity, studies of energy poverty in Spain.

[3] *Fernández Reyes, R.(2018). La adaptación al cambio climático en la prensa española: análisis del tratamiento mediático de la adaptación al cambio climático en España (2012-2016). Madrid: Fundación Biodiversidad.*
[4] *Teso Alonso, G., Fernández Reyes, R., Gaitán Moya, J.A., Lozano Ascencio, C., Piñuel Raigada, J.L. (2018). Comunicación para la sostenibilidad: el cambio climático en los medios. Madrid: Fundación Alternativas*

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6.4. The importance of NGOs

Environmental NGOs are entities recognised and respected by citizens. Their work goes beyond environmental protection works, given that they have completed and are currently working on social actions and governance consisting of the transfer of information and raising awareness among society on the importance of the environment.

Public opinion channelled through environmental NGOs has the power to mobilise actions from local to global level. The Ministry of the Interior's recognition of the public utility of these environmental NGOs allows for the formal recognition of the social work that these organisations perform in defence of the environment and in fostering education.

That's why many of the large environmental NGOs in this country have developed communication, information and awareness-raising strategies, using different information systems with a major role and positioning on social media, co-operative platforms, social movements and citizen science. Through thematic reports, bulletins, annual reports, videos and a constant presence on social media, the main NGOs have evolved from activism on the ground to cyber-activism, improving communication channels with the population and adapting to the information needs in format and content, especially for the new tech-savvy generations.

An example of this is *Friends of the Earth*, the biggest grass-roots ecological movement in the world, with over 1 million members in over 70 countries. Among its basic principles are fostering a local and global change towards a fair and just society that is respectful of the environment. It has a long history of publishing reports, especially in the areas of food, climate and energy and social justice.

10 steps toward a fossil fuel future free

INTEGRATED ANALYSIS. ENVIRONMENTAL INFORMATION

Another organisation with a long history in Spain is *SEO-Birdlife*. Founded in 1954, its mission is the conservation of biodiversity, using birds as a means to do so and it aims to foster the active involvement and participation of society. Among the main lines of action of the organisation we stand out environmental education, social action and citizen as well as realizing numerous scientific studies to increase knowledge of wild birds and their habitat. Since its foundation, it coordinates and develops censuses of bird species to establish the state of conservation and, at the same time, determine the state of health of the ecosystems they inhabit.

SEO/BirdLife runs 13 programmes monitoring the flora and fauna of habitats, in addition to 5 working groups also with a basis in citizen science, that mobilise thousands of collaborators and generating millions of registrations annually. These data are often demanded and used by the administration because they comply with numerous obligations established by laws, collective agreements, conventions and national and international regulations.

Source: SEO/Birdlife

In addition to the two previous organisations mentioned among the many existing ones that carry out important environmental information and communication work are the Association for the Defence of Nature (ADENA), Greenpeace, the Natural Heritage Defence League (DEPANA) and Ecologists in Action.

ADENA	WWF	GREENPEACE	GREENPEACE
ECOLOGISTAS EN ACCIÓN		SEO/BIRDLIFE	SEO BirdLife
DEPANA	DEPANA	AMIGOS DE LA TIERRA	

6.5 What is citizen science?

According to the White Paper on Citizen Science in Europe, citizen science refers to "*the general public´s engagement in scientific research activities when citizens actively contribute to science either with their intellectual effort, knowledge of their surroundings, or with their tools and resources. Participants provide experimental data and facilities for researchers, raise new questions and co-create a new scientific culture*".

While adding value, citizens acquire new skills, and deeper understanding of the scientific work in an appealing and direct way. As a result of this open, networked and trans-disciplinary scenario, science-society-policy interactions are improved leading to a more democratic research based on evidence-informed decision making. This is the line of work followed by the Spanish Citizen Science Observatory, an initiative of the Spanish Foundation for Science and Technology.

Our mission is to compile the citizen projects carried out in the country with the aim of disseminating them and creating a network of collaboration and participation between the different stakeholders - scientists, volunteers, managers, politicians, disseminators and citizens, in practicing citizen science.

CIENCIACIUDADANA EN ESPAÑA

LISTADO DE PROYECTOS CIENCIA CIUDADANA

En esta sección queremos mostrar todos los proyectos de ciencia ciudadana que se realizan o se han realizado en España, proporcionando desde el Observatorio su necesaria visibilidad.

6.6 The importance of social media in environmental communication

Since their creation, social media sites have been a transformational element in modern society, acquiring increasing importance and becoming practically essential. Beyond their original purposes, the transfer of messages, images or videos, social media have become shop windows and channels of communication and dissemination for all themes imaginable. Because they are open to all users, allowing and fostering citizen participation, they facilitate the sharing and exchange of experience and opinions, initiating campaigns and evaluating results.

The network has evolved continuously. It has gone from the initial Web 1.0, which was unidirectional, read-only and comprised of static content, to Web 2.0, known as the social web. It is a collaborative, dynamic platform open to participation and allows interaction between users. The latest step was Web 3.0 or the semantic web, the cloud web, the applications web and the multi-device web, which extends the availability of the service and participation in terms of both the media used (mobile terminals) and the support offered by the cloud for the storage or information without the need for hard drives. And Webs 4.0 and 5.0 will emerge...

The environment has been converted in one of the most covered topics on social media, in both generic and specific terms, due to the unlimited potential for collaboration it offers. Public and private entities, much like the population in general, use these platforms to express information, create campaigns and generate conscience with respect to the complex problems faced by today's society.

Over recent years, access to the internet on mobile devices (*smartphones*) has facilitated the further extension of social media use. The increase in the provisions of these devices has led to the number of people who use these applications and the time they spend on them, to increase and it has also led to companies and public institutions using them to a much greater extent in order to communicate with society on environmental issues.

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At the same time, society's concern with environmental problems has seen it adopt a more active role and provide essential collaboration in the raising of awareness and in communication. In this flow, social media facilitate and simplify communication between public managers and citizens, fulfilling the functions of communication and reporting channels, where greater immediacy can be offered for the resolution of conflict and a clear added value in redirecting the user to official websites, for example, so that the responsibility and rigour of the information can be monitored. In this sense, social media complement traditional environmental information resources and can be understood as a tool to improve them.

Blogs are spaces on the web where authors express their opinions and allow users to post comments or observations and subsequent replies with clarifications and opinions that can, on occasion, have mass appeal.

The Royal Spanish Academy Dictionary defines blog as: "Website that includes, in the form of a personal diary of the author or authors, contents of interest, updated frequently and often commented on by readers."

Ultimately, in relation to environment, social media are increasingly used to inform, to teach/raise awareness/educate and to mobilise society. Increasingly there is more information and environmental response. One only needs to do a quick we search to confirm how the number of networks and blogs has mushroomed. Some of the best known are the following:

Facebook: created around 2005 by a group of students at Harvard University to stay in contact with just an email address. Use the text to share together with logo.

Twitter: created around 2006, it allows the publication of short texts known as tweets.

INTEGRATED ANALYSIS. ENVIRONMENTAL INFORMATION

Instagram: In use since 2010 to upload photos, its widely used today. It allows users to add a comment of description of the photograph in the form of hashtags that facilitate searches and interaction with other users.

YouTube: created in 2005, it offers a web space for sharing videos uploaded by users via the internet. Anyone can then access these videos and there is a space to leave comments.

An example of a social media site with a specific theme is the Red Emprendeverde network, a platform of the Biodiversity Foundation that supports entrepreneurs in fostering the creation and consolidation of companies and new lines of business in environmental activities. It is a specialised initiative in the sustainable economy, a network to assist all those who want to take advantage of the economic opportunities related to the protection of the environment.

Its social network had 9,084 people in July 2019 registered on the Red Emprendeverde network.

A clear example of the potential that the use of social media for environmental purposes can reach is the *Fridays for Future* youth movement, which is on tip of everyone's tongue thanks to the viral spread of photographs and messages on social media. Today, the Instagram account has 59,600 followers while the Twitter account has 26,500.

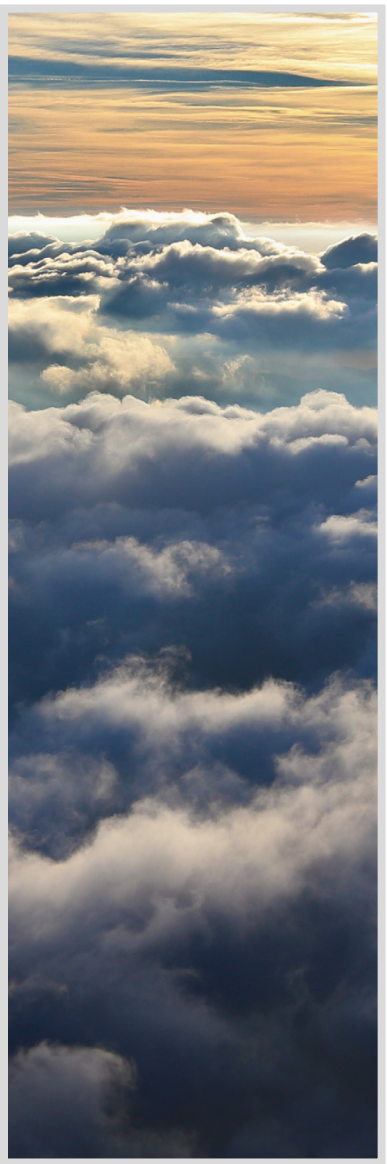
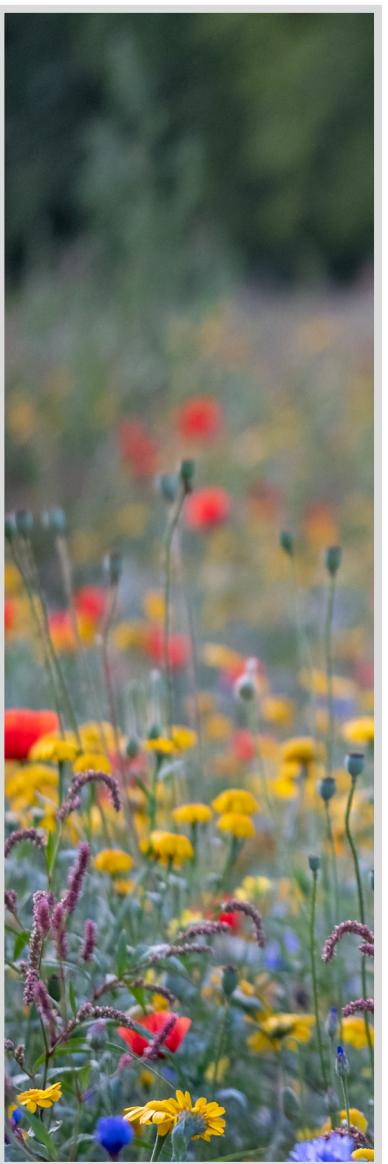
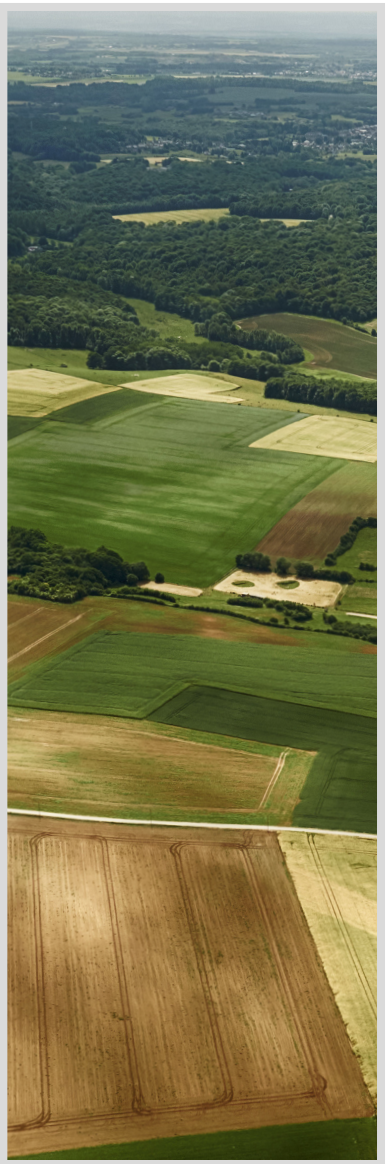
2. AREA OF KNOWLEDGE AND ENVIRONMENTAL TOPICS

2.1 Air and climate

2.2 Nature

2.3 Sectors of the economy

2.4 Sustainability


2.1 AIR AND CLIMATE

2.1.1 Emissions and air quality

- Greenhouse Gas Emissions
- Emissions of atmospheric pollutants
- Mean annual concentration of NO_2
- Mean annual concentration of PM10
- Mean annual concentration of PM2.5
- Mean annual concentration of O_3
- Regional background air quality: mean concentrations of SO_2, NO_2, PM2.5, PM10 and O_3

2.1.2 Energy and climate

- Primary energy consumption
- Final energy consumption
- Generation of electricity from renewable sources
- Energy dependency
- Guarantees of origin and electricity labelling
- Drought periods
- Carbon footprint register, compensation and absorption projects
- Spanish Carbon Fund 'Clima Projects'

2.1.1 EMISSIONS AND AIR QUALITY

The decarbonisation of the economy is one of the main principles governing Spanish environmental policy. The strategic framework for climate and energy established to advance in this area is set across three important initiatives pending approval: the Climate Change and Energy Transition Bill, the future Integrated National Energy and Climate Plan and the Fair Transition Strategy.

Article 3 of the draft Climate Change and Energy Transition Bill sets a target of at least a 20 % reduction in greenhouse gas emissions (GHG) by 2030, on the figures from 1990, for the Spanish economy as a whole, and a reduction of 90 % by 2050. What's more, by the same year the electricity system must be based exclusively on renewable energy sources.

Along this same line, the draft of the Integrated National Energy and Climate Plan 2021-2030 includes a series of measures aimed at reducing GHG emissions by 20 % by 2030, based on 1990 levels, specifying reduction targets for different sectors of the economy.

This decarbonisation process in Spain is going to be reinforced with the updating of the EU energy policy, initiated in recent years, which sets out a package of clean energy measures for all Europeans. It is aimed at facilitating the transition to cleaner energy and avoiding the use of fossil fuels, allowing us to satisfy the Paris Agreement commitments to reduce GHG emissions.

The package of Clean Energy measures for all Europeans is an important step towards the implementation of the strategy of the Energy Union, adopted in 2015.

This European framework is comprised of eight legislative acts, four of which were approved in 2018: the Directive on the energy performance of buildings (Directive 2018/844), the Directive on fostering the use of energy from renewable sources (Directive 2018/2001), the Directive on energy efficiency (Directive 2018/2002) and the Regulation on the Governance of the Energy Union and Climate Action (Regulation 2018/1999). These new directives must be transposed into domestic legislation in each Member States within the term established in each of them (between one to two years).

Directive (EU) 2016/2284 of the European Parliament and of the Council of 14 December 2016 on the reduction of national emissions of certain atmospheric pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC establishes emission reduction commitments that will allow for levels of air quality to be reached that do not constitute significant negative or risks on human health or the environment. It is an integrated approach that contemplates the continued improvement of air quality through the reduction of emissions of pollutants. The Directive was transposed into Spanish legislation via *Royal Decree 818/2018, of 6 July, on measures for the reduction of national emissions of atmospheric pollutants*.

Specifically, it establishes new national commitments for reductions of emissions by 2020 and 2030 for sulphur dioxide (SO_2), nitrogen oxides (NO_x), non-methane volatile organic compounds (NMVOCs), ammonia (NH_3) and fine particulate matter PM2.5.

2.1.1 EMISSIONS AND AIR QUALITY

This law also stipulates the creation of an atmospheric pollution monitoring network that allows the monitoring of the negative effects on ecosystems. The network for monitoring pollution in natural and semi-natural ecosystems will be located in the three biogeographical regions of the Iberian Peninsula (Atlantic, Mediterranean and Alpine), taking advantage, where possible, of the locations of other already-operable networks.

The European Commission report *The First Clean Air Outlook* (COM(2018) 446 final) of June 2018, makes clear the existing environmental and health problem arising from poor air quality caused by atmospheric pollution. The conclusions of the report highlight the importance and the role of national atmospheric pollution control programmes for reaching the 2030 emission reduction commitments of Directive (EU) 2016/2284. For the World Health Organisation and the European Environment Agency a large percentage of the population that inhabits European cities is exposed to levels of atmospheric pollution that affects their health and also high costs (medical attention, lower productivity of workers and caused damage to the natural environment, agriculture, soil and water quality, among others).

The National Atmospheric Pollution Control Programme (hereinafter the PNCCA, as per the Spanish) arises from an obligation of 2016/2284 and establishes the objectives and strategic actions to take from 2020 to comply with reduction commitments established for Spain. The PNCCA integrates transversal aspects on energy and climate change to provide a solution to the needs of areas where the population and ecosystems are exposed to higher levels of pollution.

The public participation period in the approval of the PNCCA for the 2019-2022 period closed on 10 May 2019.

The Spanish Inventory System (SEI)

The Spanish System for the Inventory and Projections of Greenhouse Gas Emissions and Atmospheric Pollutants (SEI) periodically prepares the National Inventory of greenhouse gas emissions and absorptions of greenhouse gases and the National Inventory of atmospheric pollutants, and the Projections for atmospheric emissions and absorptions. These three elements are the basis of the assessment of compliance with international and European commitments on atmospheric emissions. They also serve as tools for the drafting of policies and measures for the mitigation of emissions and the assessment of their effectiveness in achieving the objectives.

The information derived from the Spanish Inventory Systems is organised across two specific Inventories:

Spanish Inventory of Greenhouse Gas Emissions. *Generates the NIR (National Inventory Report). This report meets the information requirements of the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol, and the corresponding community legislation established in Regulations (EU) 525/2013 (MMR Regulation)[1]. It offers information on anthropogenic emissions by sources and the absorption by sinks for six groups or species of gases with direct greenhouse gas effect: carbon dioxide (CO_2) methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6). Overall emissions and absorptions are expressed in terms of CO_2 equivalent (CO_2-eq), calculated on the basis of the atmospheric warming potentials of the 4th Assessment Report of the Intergovernmental Panel on Climate Change (IPCC). This report is complemented by emission data presented in the Common Reporting Format (CRF) tables.*

National Inventory of Emissions of Atmospheric Pollutants. *Generates the IIR (Informative Inventory Report). This report complies with the information requirements of the Geneva Convention on Long-Range Transboundary Air Pollution (CLRTAP), and the Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone and Directive (EU) 2016/2284 on the reduction of national emissions of certain atmospheric pollutants or National Emission Ceilings Directive (NECD).*

The Inventory estimates annual atmospheric emissions of nitrogen oxide (NO_x), sulphur dioxide (SO_2), ammonia (NH_3), carbon monoxide (CO), non-methane volatile organic compounds (NMVOCs), particulate matter, heavy metals and some Persistent Organic Pollutants.

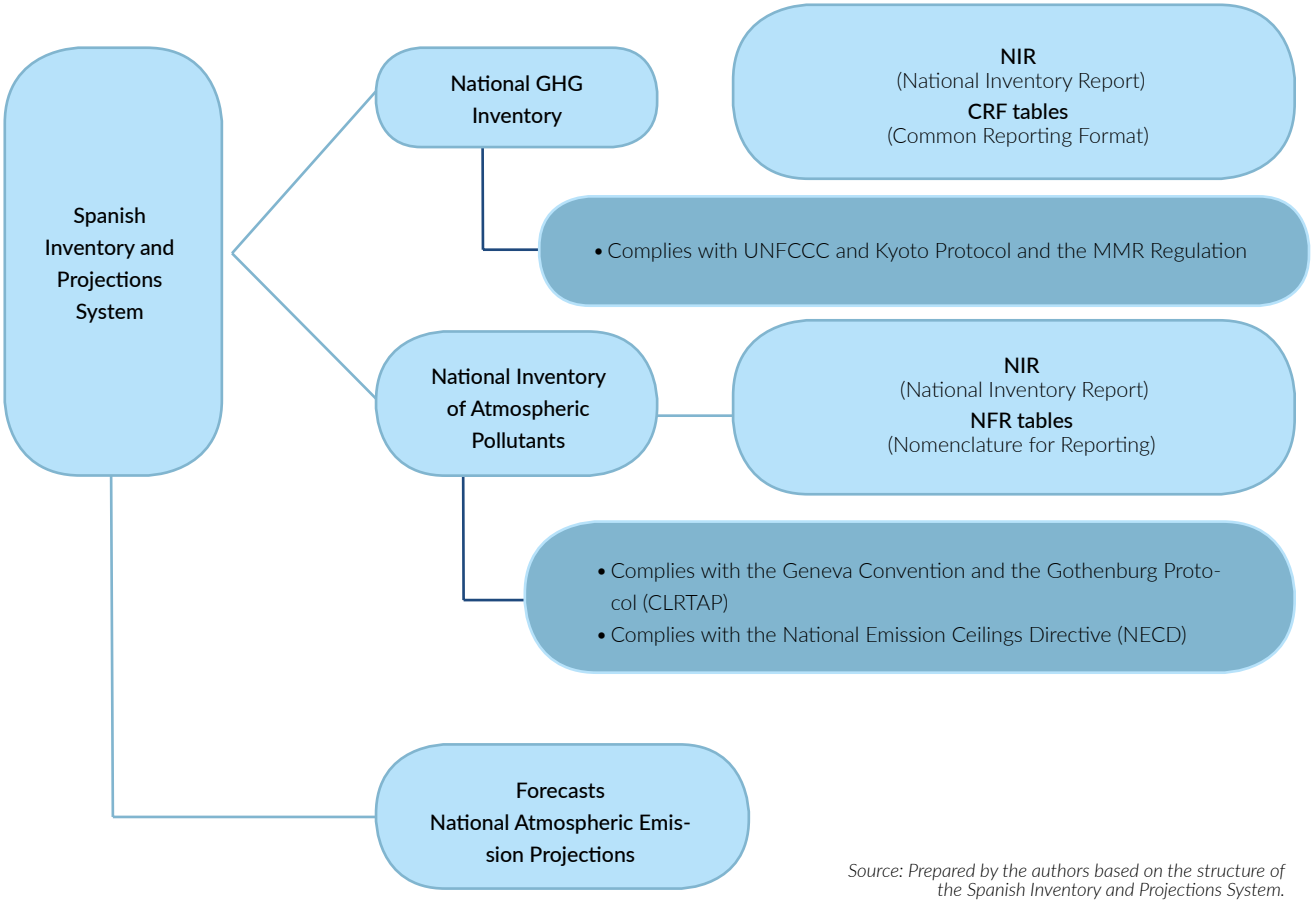
[1] *Regulation (EU) No 525/2013 of the European Parliament and of the Council of 21 May 2013 on a mechanism for monitoring and reporting greenhouse gas emissions and for reporting other information at national and Union level relevant to climate change and repealing Decision No 280/2004/EC.*

2.1.1 EMISSIONS AND AIR QUALITY

The geographic coverage of the scope of application of CLRTAP and NECD excludes emissions of atmospheric pollutants in the Canary Islands. In both cases, emissions in the Canary Islands are not reported and are not counted for compliance with the limitation objectives of atmospheric pollutant emissions. Nevertheless, the information on atmospheric contaminant emissions with data from the Canary Islands is also prepared and included in Annex 4 of the IIR for information purposes.

This report is complemented by the emission data presented in tables of data from the NFR (Nomenclature for Reporting) report, referring to the national total with and without the Canary Islands.

In addition, on a biannual basis, the SEI prepares the atmospheric pollutant emission projections in compliance with Directive (EU) 2016/2284 and CLRTAP and the greenhouse gas projections in accordance with the provisions of Article 14 of the MMR Regulation and Article 23 of the Regulation for execution.



Source: Prepared by the authors based on the structure of the Spanish Inventory and Projections System.

The latest edition of the National Inventory of Atmospheric Pollutants 1990-2017 has received the recognition of the Geneva Convention, granted by the members of the Inventories and Projections *Task Force* of the Geneva Convention on Long-Range Transboundary Air Pollution, obtaining the most complete inventory report award in 2019. The award is for completeness, transparency and design of the annual inventory report on atmospheric pollutant emissions. This has been the second time in the last three years that Spain received the award.

2.1.1 EMISSIONS AND AIR QUALITY

Emissions trading is one of the main tools used to comply with the Paris Agreement on climate change and reduce emissions in a profitable manner in regard to emissions from facilities that are major consumers of energy, of which there are around 1000 in Spain.

Registro de Comercio de Emisiones: a pioneering, useful and profitable tool to have a cleaner air and fight against the climate change

In this regard, Royal Decree 18/2019 prepares for the entry into force in Spain of the new phase of EU Emissions Trading Scheme and develops aspects relating to its application in the period 2021-2030. It transposes Directive (EU) 2018/410, approved to enhance cost-effective emission reductions and facilitate investment in low-carbon technologies.

In recent years, the EU has been adopting measures to reduce CO_2 emissions from new cars and light commercial vehicles (vans). In late 2018, strict rules on CO_2 emissions were enforced for these vehicles: the average CO_2 emissions of new cars registered in the EU must be reduced by 15 % by 2025 and 37.5 % by 2030, in comparison with the emissions limits in force in 2021. The CO_2 emissions of new vans must be reduced by 15 % in 2025 and 31 % in 2030. These are general objectives for the entire EU vehicle fleet, which are also accompanied by mechanisms to incentivise the sales of zero-emission and low-emission vehicles, such as fully electric and plug-in hybrid vehicles.

The results of GHG emission in 2017 show an increase of 4.2 % on the previous year, reaching 340.2 million tonnes of CO_2 eq. The overall balance for the period 1990-2017 was an increase of 17.9 %, although there are three clearly differentiated periods therein: growth from 1990 to 2008, decrease between 2008 and 2013 and slight growth (with intermittent fluctuations) from 2013 to 2017.

This 2017 increase has its origin in electricity production in coal-fired and combined cycle thermal power plants and the associated higher emissions (they grew by almost 17 %) due to the needs of attending to electricity demand in a dry year in which hydraulic energy production fell by 49 %.

Nevertheless, the advance of the emissions inventory for 2018 shows a reduction of GHG emissions of 2.2 % compared to the year 2017, mainly due to a decrease of 15.7 % in emissions arising from electricity production due to the increase in hydraulic and renewable production.

The year 2017 was generally not a favourable one in terms of production of pollutants, a situation which leaves us some way off meeting the new national emission reduction commitments set for 2020 and 2030 (*Royal Decree 818/2018 on measures for the reduction of national emissions of atmospheric pollutants)*. 2017 saw an increase of 1.2 % emissions of the main pollutants, 2.5 % for NO_x, 2.5 % for NMVOCs, 3 % for SO_x, 4 % for NH_3 and 2.5 % for PM2.5.

Air Quality

The Atmospheric pollution is a major threat to human health and the environment due to the deterioration of the quality of the air we breathe. The latest report of the European Environment Agency (EEA) is categorical on this point; highlighting the role of road transport which it singles out as one of the main sources of atmospheric pollution in Europe. This is partly due to the hazardous nature of some of the pollutants emitted (nitrogen dioxide and particulate matter, for example) and the manner in which they are dispersed: close to people in the urban environment and at breathable height. The EEA report *Air Quality in Europe 2018* also points to agriculture, energy production, industry and households as the main sectors that contribute to atmospheric pollution.

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Climate change first and air pollution second are the most important environmental problems to European citizens according to the latest European Commission Special Eurobarometer on *Attitudes of European citizens towards the environment*.

The most recent references to improving air quality in Spain are in the Air Plan 2017-2019 (Air Plan II) for the period 2017-2019. This was the continuation the National Air Quality and Atmospheric Protection Plan 2013-2016 (Air Plan). This will be replaced by the National Atmospheric Pollution Control Plan which must be approved within the framework of *Directive (EU) 2016/2284 of the European Parliament and of the Council of 14 December 2016 on the reduction of national emissions of certain atmospheric pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC*.

Among the objectives of Air Plan II, currently in force with an initial budget of 276 million euros are the reduction of pollution, the improvement of information on air quality and the raising of awareness among citizens

Plan Nacional de Calidad del Aire y Protección de la Atmósfera 2013-2016: **Plan Aire** (12/04/2013)

Plan Nacional de Calidad del Aire y Protección de la Atmósfera 2017-2019: **Plan Aire II** (15/12/2017)

Programa Nacional de Control de la Contaminación Atmosférica

The *Spanish Air Quality Assessment Report* corresponding to the year 2017 published in October 2018 shows, in general, poorer results that 2016, with an increase in the number of areas where emissions of NO_2 and PM10 exceeded the legislated values. The exceedances in the annual ceiling value for NO_2 emissions were recorded in the cities with the highest intensity of traffic (Madrid, Barcelona, Granada and Bilbao). This past year also saw an increase in the number of areas (rising from 3 to 5) with exceedances of the daily limit value for particulate matter (PM10), while the annual limit value was exceeded in only one area (Avilés), as in the previous year.

Tropospheric ozone (O_3) maintained a similar situation in 2017 to that in 2016. An increase in the area in which the objective value for health protection was exceeded (increasing from 35 to 36) was recorded. All of these cases were suburban or rural areas, and conditioned by high insolation and emission of precursors, which include NO_x and volatile organic compounds.

The Directives on air quality that are configured in the framework of reporting obligations for Spain to the EU are the following:

- *Directive 2008/50/CE, de 21 de mayo de 2008, relating to air quality and the cleanest atmosphere in Europe*
- *Directive 2004/107/EC of the European Parliament and of the Council of 15 December 2004 relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air*
- *Commission Directive (EU) 2015/1480 of 28 August 2015 amending several annexes to Directives 2004/107/EC and 2008/50/EC of the European Parliament and of the Council laying down the rules concerning reference methods, data validation and location of sampling points for the assessment of ambient air quality.*

A comparison between atmospheric emissions and air quality

With the aim of establishing a relationship between emissions of pollutants to the atmosphere and the quality of the air we breathe or to which our physical and natural environment and its biodiversity is exposed, a pilot test was carried out to compare some air quality data relating to NO_2 and PM10 with the estimate for emissions of these same pollutants (the first in the form of NO_x and the second discounting natural intrusions arising from the contribution of African dust). This research was conducted for the years 2010-2017 throughout the national territory (including the Canary Islands).

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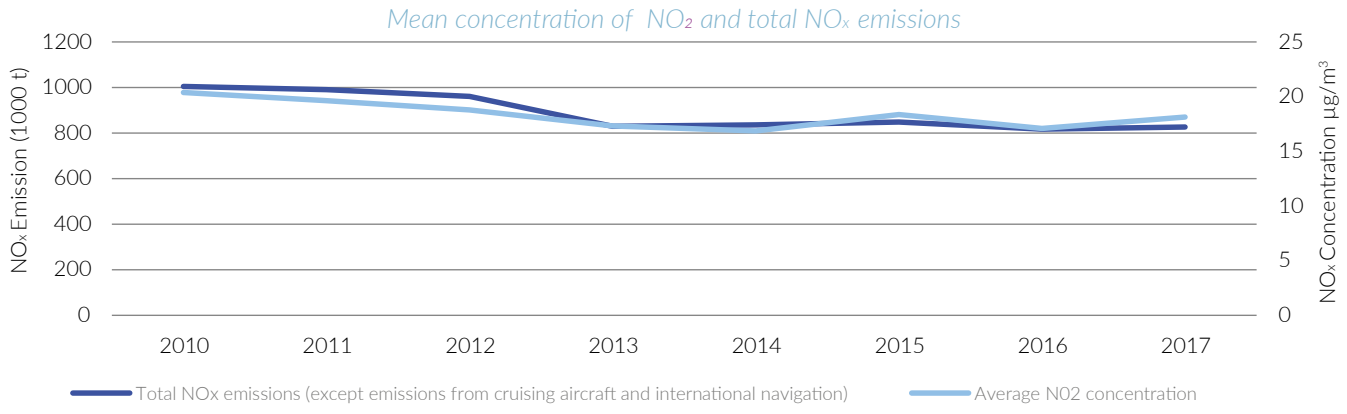
It is the first analysis based on very general and global data that might serve as the basis to initiate a future line of research in this area.

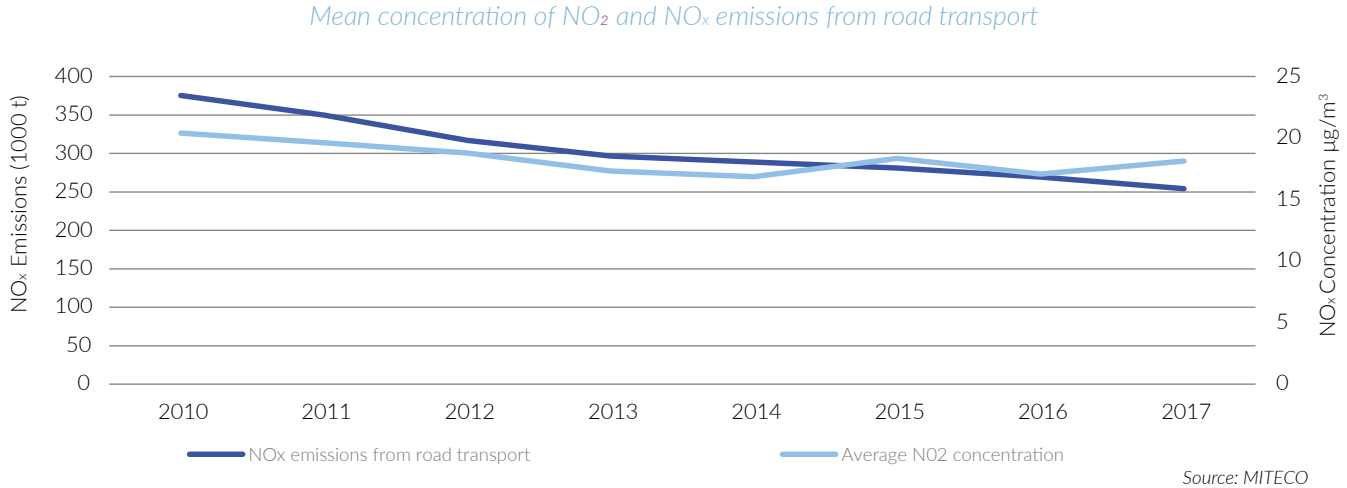
Comparison between NO_x emissions and concentrations of NO_2

The comparison between annual NO_x emission trends and the average annual concentration of NO_2 shows us a similar downward trend in both, albeit with different absolute reductions. While the measures adopted to reduce NO_2 emissions have achieved a decrease of 17.8 % in total emissions (without considering emissions from cruising aircraft and international navigation) and over 30 % of road transport and urban emissions (urban area road and Residential, Commercial and Institutional emissions, hereinafter RCI), levels of inmission (mean annual concentration at all stations used in the air quality assessment) have fallen to a lesser degree (11 %).



Source: MITECO

The main measures adopted for the reduction of NO_2 emissions constituted the introduction of technological advances in the vehicle fleet and in fuel, incorporating alternatives that pollute less (natural gas, gas, hybrid and electric vehicles). Other measures focus on fostering the development of combined cycle thermal plants with technical control and reduction of emissions.



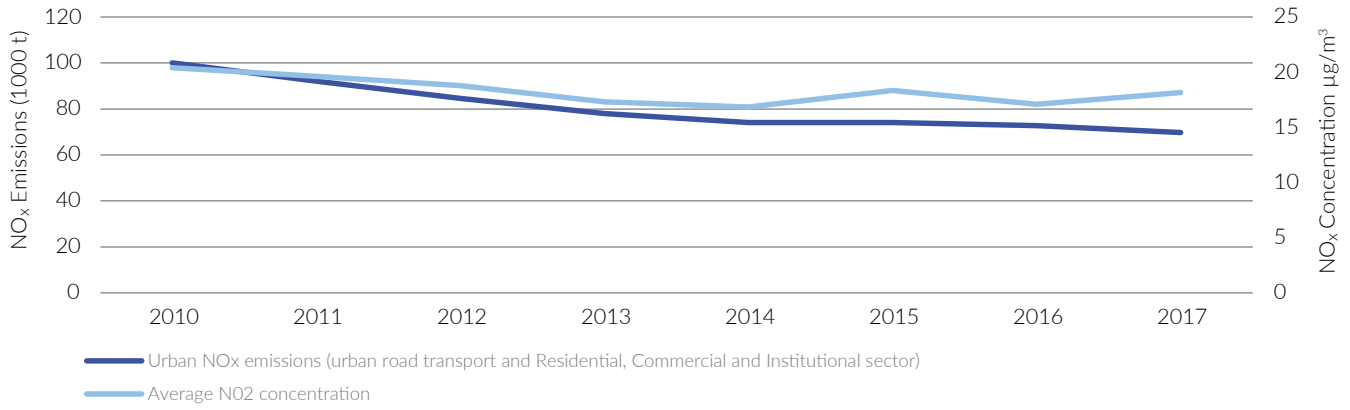
Source: MITECO

Specifically, the reduction of emissions of NO_x from road transport exceeded 32.3 % and its downward trend continues, decoupling the slight increase in mean concentration levels of this pollutant recorded in 2014. Key to these reductions were technological advances made in the vehicle fleet, with increasingly more efficient vehicles incorporating automatic engine stop systems during transit, such as at traffic lights. Once again, the increase in the use of alternative fuels has

2.1.1 EMISSIONS AND AIR QUALITY

had a major role on the reduction of this pollutant. The development of similar measures for heavy vehicles (whose consumption makes up a relevant part of the road transport total) remains a challenge, with the push of biofuels as a renewable technology that will reduce the use of fossil fuels.

Mean concentration of NO_2 and NO_x emissions in urban area (urban road transport and RCI)



Source: MITECO

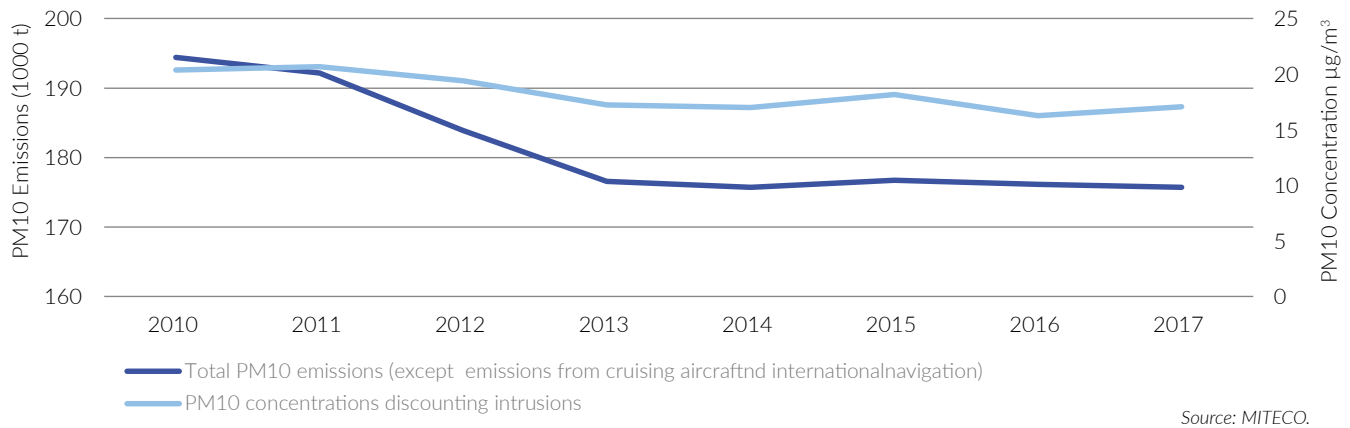
For their part, urban emission of nitrogen oxide fell by 30.3 % showing a continuous trend decoupled from the increase in mean annual NO_2 emissions. These emissions are covered by urban area road transport and the RCI sector. Among the causes that have contributed to this decrease in emissions, in addition to technological improvements in engines and fossil fuels and the increased presence in the fleet of cars with alternative engines (hybrid and electric), is the delimitation of city centre areas with limited access for vehicles that pollute the most and even pedestrianisation of same, eliminating motor traffic. In this regard, the draft Climate Change and Energy Transition Bill invites municipalities with populations of more than 50,000 inhabitants to foster the introduction of mitigating urban planning measures to reduce transport emissions.

Comparison between PM10 emissions and concentrations of PM10

The annual trends in total emissions of particulate matter of a diameter of less than 10 µm and their mean annual concentration, the latter detected at all stations included in the assessment, offer a clear decoupling up to 2013, the year in which the patterns of both can be considered similar.

Much more significant reductions are recorded in concentration of particulate matter (reaching 16.2 % in measured where the contribution of natural intrusions is discounted). The reduction of PM10 emissions was 9.6 % (in total emissions without considering cruising aircraft and international navigation) and of only 1.6 % in PM10 emissions of urban origin, including road transport in urban areas and the RCI sector.

PM10: Comparison of emissions and concentrations

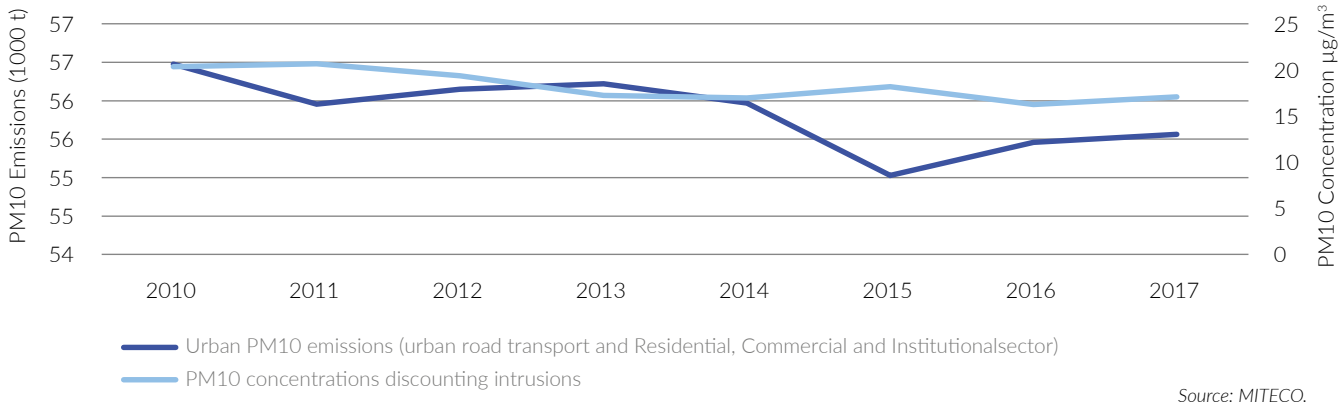


Source: MITECO.

2.1.1 EMISSIONS AND AIR QUALITY

The main source of the reduction of total emissions can be found in the emergence and implementation of emission reduction technique in electricity production plants and industrial facilities and the improvements made in automobile technology. Also in promoting the use of electric vehicles and vehicles with lower consumption of fossil fuels (hybrids).

PM10: Comparison between emissions and concentrations in the urban environment



Source: MITECO.

The increase in the concentration of PM10 in 2015 coincided with a decrease in urban emissions. This may be due to meteorological conditions in the year 2015 which was extremely hot in Spain, with an average temperature of 16° C and low rainfall which made it a very dry year in Spain as a whole (average precipitation of around 500 mm).

The measures adopted to reduce emission of particulate matter of urban origin do not seem sufficient given the margin of improvement that may be set as a target to enhance reduction.

Main conclusions

- A good correlation is observed between the variation in NO_x emission and the mean annual de NO_2, with a correlation coefficient of 0.91. The mean for NO_2 recorded throughout the network of air quality stations has fallen 11 % in this period, while NOx emission estimates at national level have fallen 18 %.
- The correlation of the evolution for PM10 is also relatively good (coefficient of 0.94), with period variations of -16 % in mean inmissions and -10 % in emissions.

2.1.1 EMISSIONS AND AIR QUALITY

Greenhouse gas emissions

The indicator shows the emissions of greenhouse gases included in the Kyoto Protocol expressed in CO_2-eq.

Justification

The evidence for climate change and its consequences are increasingly more concerning as is the impact, environmental economic and social. Behind these causes, the increase in the concentration of GHGs and their emissions makes it necessary to monitor them and apply policies and measures for their reduction.

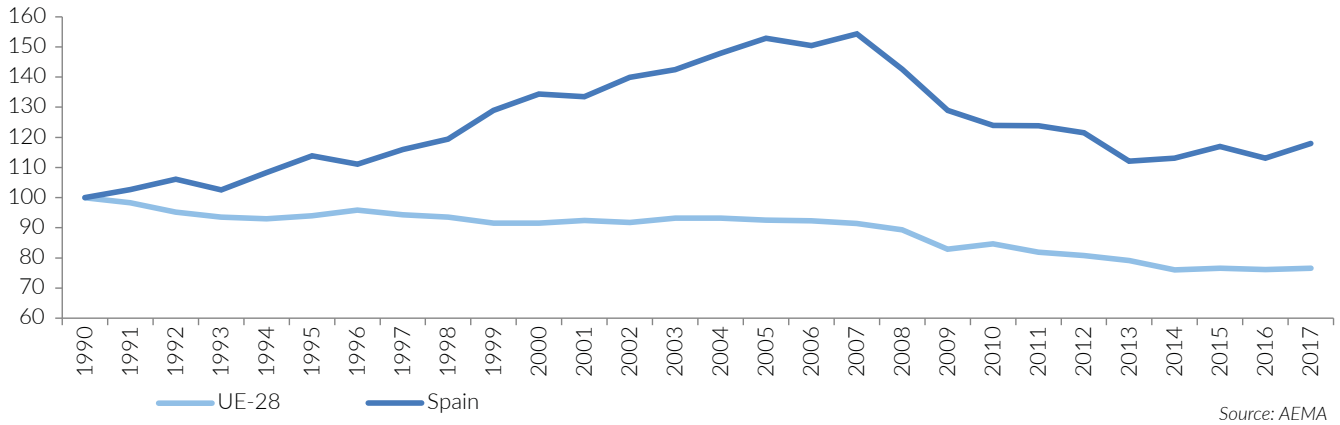
The indicator allows the monitoring of the 7th EAP (primary objective 2) and SDGs (goals 9 and 13) as well as the future Law on climate change and energy transition and the Integrated National Energy and Climate Plan.

In 2017, there were 340.2 million tonnes of CO_2-eq in Spain, which constituted an increase in total emissions of 4.2 % in 2016. This increase has its origin in the low rainfall in what was a particularly dry year (second driest since 1965) and saw a reduction in hydraulic production of electricity which translated into a higher demand for fossil fuels in the energy mix (coal-fired and combined cycle power plants) and, therefore, an increase in CO_2 emissions. In figures, hydraulic production fell by 49 %.

In terms of the global balance of emissions, the main sectors, in order of contribution were the following: transport (26 % of the total and an increase of 3.1 % on the previous year), electricity production (20 % and an increase of 16.9 % on 2016), industrial activities (19 % and an increase of 7,1 % on 2016) and agriculture (12 % and an increase of 3,1 % on the previous year). As usual, over 80 % of GHG emissions were from CO_2, followed by methane (accounting for 12 %).

At European level, Spain was responsible for 7.9 % of total emissions of the EU 28 in 2017, the country with the sixth highest emissions behind Germany, United Kingdom, France, Italy and Poland. These six countries together accounted for almost 70% of total EU emissions.

Greenhouse Gas Emissions (CO_2-equivalent)
Index; 1990=100 and 1995=100 for fluorinated gases



Source: AEMA

EMISSIONS OF POLLUTANTS:	TREND 2010-2017	TREND PAST YEAR	2030 OBJECTIVES (PENDING CONFIRMATION)
Aggregate GHG emissions			Draft Integrated National Energy and Climate Plan: to reduce GHG emissions by 21% on 1990
			Draft Climate Change and Energy Transition Bill: reduce GHG emissions by 20% on 1990 figures (and 90% by 2050)

Source: European Environmental Agency. Data viewer on greenhouse gas emissions and removals, sent by countries to UNFCCC and the EU Greenhouse Gas Monitoring Mechanism (EU Member States). https://www.eea.europa.eu/data-and-maps/data/data-viewers/greenhouse-gases-viewer
Ministry for Ecological Transition, 2019. National Inventory of Atmospheric Pollutants. Greenhouse gas emissions. 2019 Edition. Inventoried series 1990-2017. Data provided on request by the Sub-directorate General of Air Quality and Industrial Environment of the Directorate General of Biodiversity and Environmental Quality (MITECO).

2.1.1 EMISSIONS AND AIR QUALITY

Emissions of atmospheric pollutants

The indicator shows the values for emissions of five contaminants considered in Directive (EU) 2016/2284 on National Emission Ceiling: sulphur oxides (SO_x), nitrogen oxide (NO_x), non-methane volatile organic compounds (NMVOCs), ammonia (NH_3) and particulate matter below 2,5 µm (PM2.5).

All pollutants are expressed as an index where the year 1990=100 except PM2.5 for which the year 2000=100.

Justification

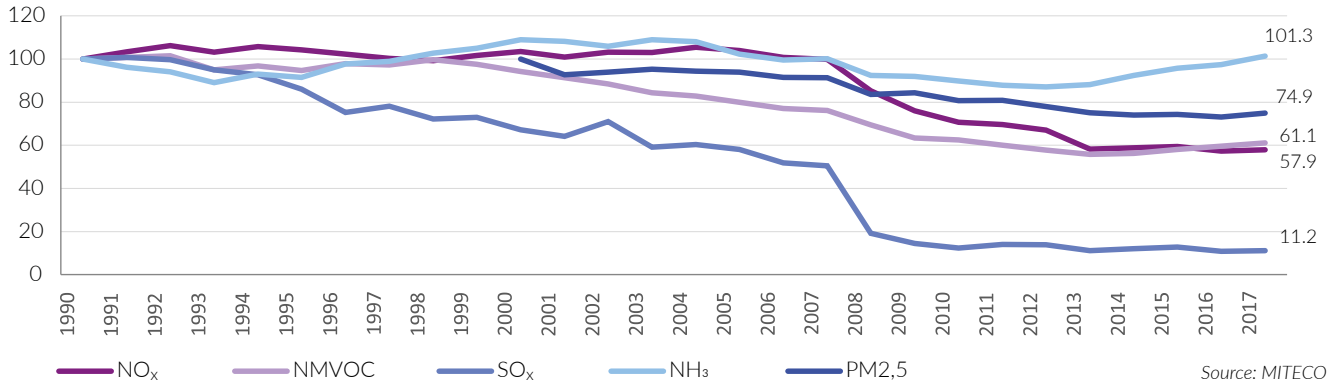
Atmospheric contamination damages human health and the environment. It is necessary to monitor emissions of pollutants to verify compliance with the legislated values and their relation to air quality and damage to Europe's population and ecosystems.

The indicator allows for the monitoring of the 7th EAP (primary objective 3) and SDGs. Directive (EU) 2016/2284 on National Emission Ceilings and the Geneva Convention on Long-Range Transboundary Air Pollution.

Total emissions for the five atmospheric pollutants considered have experienced an increase since 2017. The total emission were: 821 kilotons of NO_x (increase of 1.2 % on 2016), 631.9 kilotons of NMVOCs (increase of 3.6 % on 2016), 236.7 kilotons of SO_x (increase of 3 % on 2016), 520.8 kilotons of NH_3 (increase of 4% on 2016) y 107.6 kilotons of PM2.5 (increase of 2.5 % on 2016).

Even with the increase over the past year, in relation to 1990, all pollutant emissions have fallen, with the exception of NH_3, which have increased by just 1.3 %. The reductions in emissions of these pollutants is mainly due to technological improvements in energy production and the vehicle fleet. The pollutant for which emissions have been reduced the most is SO_x, falling 88.9 %.

Emissions of atmospheric pollutants
Index; 1990=100 and 2000=100 for PM2.5



Source: MITECO

National emission ceilings (kt) and compliance index (ceiling = 100 %) from 2010

POLLUTANT	CEILING (KT)	2010	2011	2012	2013	2014	2015	2016	2017
SO_2	847	91	91	88	76	78	80	77	79
NO_x	662	95	92	88	85	86	89	91	93
NMVOCs	746	33	38	37	30	33	35	29	30
NH_3	353	130	127	126	128	134	139	141	147

Since 2010, emissions of NO_x, NMVOCs and SO_x have remained under the ceiling set for Spain by the European directive and the Gothenburg Protocol. However, NH_3 emissions have exceeded the limit through the entire period (2010-2017). In 2017 Spain requested an adjustment of ammonia emissions to evaluate compliance with the ceiling adequately but this was rejected by the European Commission.

Source: Ministry for Ecological Transition, 2019. National Inventory of Atmospheric Pollutants. Emissions of Atmospheric Pollutants 2019 Edition. Inventoried series 1990-2017. Data provided on request by the Sub-directorate General of Air Quality and Industrial Environment of the Directorate General of Biodiversity and Environmental Quality (MITECO).

2.1.1 EMISSIONS AND AIR QUALITY

Mean annual concentration of NO_2

The indicator shows, regarding nitrogen oxides (measured as NO2), the percentage of stations included in each one of the five ranges in which the mean annual concentration of NO_2 (measured as µg/m³) is classified, referring to the Lower Evaluation Threshold (LET), Upper Evaluation Threshold (UET) and the Annual Limit Value (ALV). These ranges are:

- NO_2 concentrations lower or equal to LET/2 (13 µg/m³)
- NO_2 concentrations between the LET/2 and the LET (13-26 µg/m³)
- NO_2 concentrations between the LET and the UET (26-32 µg/m³)
- NO_2 concentrations between the UET and the ALV (32-40 µg/m³)
- NO_2 concentrations exceeding the ALV (> 40 µg/m³).

Justification

Poor air quality becomes a health problem for the population that breathes it, leading to a deterioration in the quality of life and welfare of the population. It is necessary to have ambient air quality targets to prevent or reduce the harmful of effects for human health and the natural environment as well as procedures and measures, and to ensure that information on air quality is made available to citizens.

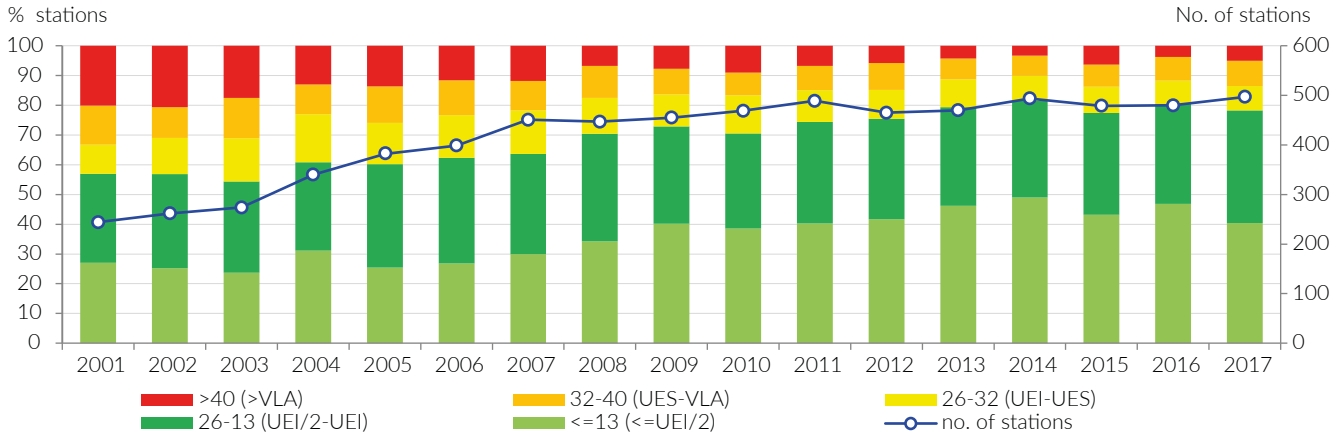
The indicator allows for the monitoring of the 7th EAP (primary objective 3) and SDGs (objectives 3 and 11) of the requirements established in Law 34/2007 and Directive 2008/50/EC

In 2017, exceedances of the ALV for NO_2 were registered in seven areas, one more than in 2016, detecting a slight deterioration in air quality in relation to this pollutant.

The graphic shows us how over time the percentage of stations where the ALV is exceeded has stabilised in recent years, at around 5 % , as has the percentage for stations between the LET and the ALV, which is around 16 % of stations. The positive side of this increase in the percentage of stations below the LET, which, regardless of the increase recorded in 2017, represent percentages close to 80 % since 2009.

Over the 17 years from 2001 to 2017, the number of stations where this pollutant has been evaluated has doubled, from 244 in 2001 to 497 in 2017.

Mean annual concentration of NO_2: stations used in the assessment of air quality classified according to the different ranges established in the applicable legislation (% and total no. of stations)



Source: MITECO.

According to the European Environmental Agency, road transport was the main culprit, accounting for 39% of total NO_x emission in 2016. It was followed by the "Energy production and distribution" sector and the "Residential, Commercial and Institutional" sector with 17 % and 14 % respectively.

Source: Ministry for Ecological Transition, 2019. Air Quality Database. Directorate General of Biodiversity and Environmental Quality Data provided by means of express request

2.1.1 EMISSIONS AND AIR QUALITY

Mean annual concentration of PM10

The indicator shows the percentage of the stations included in each of the five ranges into which the annual mean concentration of PM10 (particulate matter above 10 micrometers) is classified (measure in µg/m³) of PM10, referring to the Lower Evaluation Threshold (LET), Upper Evaluation Threshold (UET) and Annual Limit Value (ALV).

These ranges are:

- PM10 concentrations lower or equal to LET/2 (10 µg/m³)
- PM10 concentrations between the LET/2 and the LET (10-20 µg/m³)
- PM10 concentrations between the LET and the UET (20-28 µg/m³)
- PM10 concentrations between the UET and the ALV (28-40 µg/m³)
- PM10 concentrations exceeding the ALV (> 40 µg/m³).

Justification

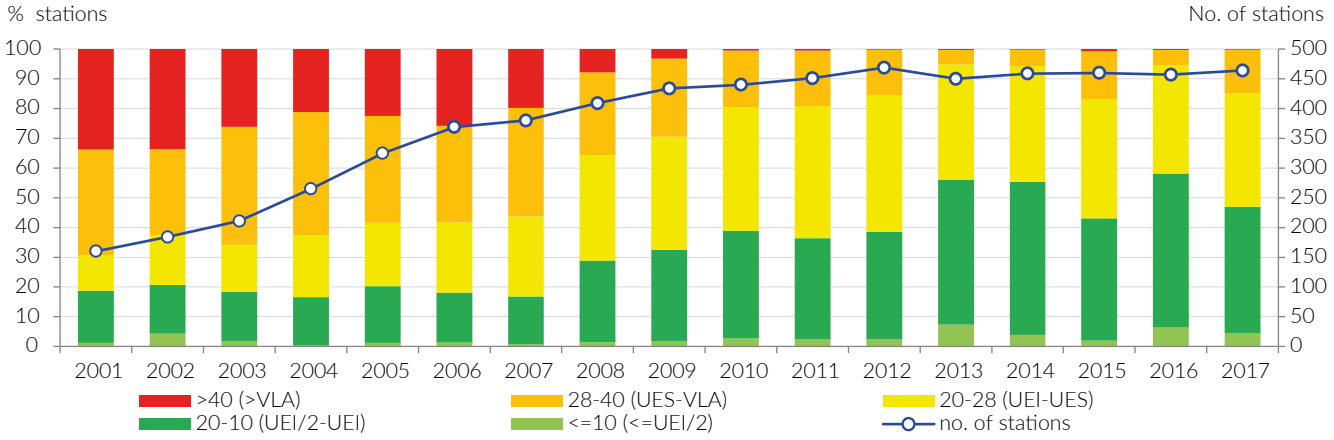
See justification in the indicator: Mean annual concentration of NO_2

In 2017 the mean annual concentration of PM10 remained the same as in the previous year with an increase only in ALV (concentration above 40 µg/m³) thus maintaining the improvement in 2016 in comparison to the exceedances at three stations in 2015.

While in recent years the percentage of stations with exceedance of ALV is practically zero, an increase is detected for 2017 in the percentage of stations where the Lower Evaluation Threshold (LET) is not met, and, therefore, they show a concentration of PM10 below 20 µg/m³, representing 47 % compared to 58 % in 2016. This circumstance has arisen while the percentage of stations exceeding the UET has increased and, therefore, the concentrations of PM10 exceeded 20 µg/m³, growing from 41 % in 2016 to 53 % in 2017.

The number of stations participating in the evaluation of this pollutant has almost tripled in the period 2001 to 2017, going from 160 in 2001 to 464 in 2017.

Mean annual concentration of PM10: stations used in the assessment of air quality classified according to the different ranges established in the legislation (% and total no. of stations)



Source: MITECO.

The report *Air Quality in Europe 2018* of the European Environmental Agency identifies the Residential, Commercial and Institutional sector as the main culprit for PM10 emissions, responsible for 39 % of such emissions in the EU-28. Industrial Processes and Use of Products comes in second place in contribution to PM10 emissions, providing 19 % of the total issued, followed in third by "Agriculture" a sector which accounted for 15 % of all PM10 emissions in the EU 28 in 2016.

Source: Ministry for Ecological Transition, 2019. Air Quality Database. Directorate General of Biodiversity and Environmental Quality Data provided by means of express request

2.1.1 EMISSIONS AND AIR QUALITY

Mean annual PM2.5 concentration

The indicator shows the percentage of the stations included in each of the five ranges into which the annual mean concentration is classified (measure in µg/m³) PM2.5 referring to the Lower Evaluation Threshold (LET), Upper Evaluation Threshold (UET) and Annual Limit Value (ALV). These ranges are:

- PM2.5 concentrations lower or equal to LET/2 (6 µg/m³)
- PM2.5 concentrations between the LET/2 and the LET (6-12 µg/m³)
- PM2.5 concentrations between the LET and the UET (12-17 µg/m³)
- PM2.5 concentrations between the UET and the ALV (17-25 µg/m³)
- PM2.5 exceeding the ALV (> 25 µg/m³).

Justification

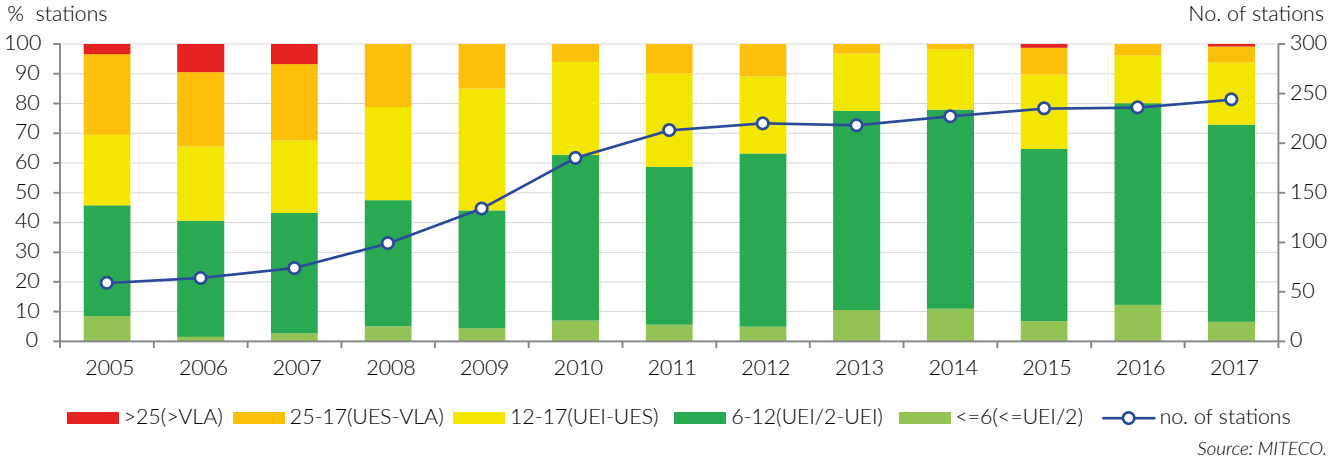
See justification in the indicator: Mean annual concentration of NO_2

No exceedances of ALV were recorded in 2017, once that the intrusions of African air masses have been discounted, maintaining the situation of 2016. Without the discounts, the measurements taken only identified two stations (0.8 % of the total) with annual mean concentrations. Nevertheless, a reduction in the percentage of stations with higher quality was recorded: those under the Lower Evaluation Threshold (LET) went from representing 80 % in 2016 to 73% in 2017, while those above the LET stood at 20 % in 2016 and 27 % in 2017.

The PM2.5 Average Exposure Indicator (AEI) assesses the average extent to which a population is exposed to PM2.5 particulate matter. It is calculated with the three-year average of the annual indicators for 2015, 2016 and 2017. The AEI in 2017 was 12.7 µg/m³, slightly above 2016's, which was 12,4 µg/m³. Even still, it offers a reduction of 9.9% compared to the AEI of reference from 2011, the value of which was 14.1 µg/m³ . The national reduction target to be met by the year 2020 is 15% (with respect to AEI 2011).

In relation to the stations participating in the PM 2.5 evaluation, between 2005 and 2017, the number has multiplied more than four-fold, as in 2005, 59 were considered while in 2017 the number of stations rose to 244.

Mean annual concentration of PM2.5: stations used in the assessment of air quality classified according to the different ranges established in the applicable legislation (% and total no. of stations)



Source: MITECO.

In 2016, as occurred in the case of PM10, the Residential, Commercial and Institutional sector was biggest contributor regarding PM2.5 pollution in the EU-28, responsible for 56 % of total emissions. This was followed by Road Transport which accounted for 11 % and, thirdly, Industrial Processes and Use of Products with 10 % of total PM2.5 emissions all according to the European Environmental Agency's *Air Quality in Europe 2018* report.

Source: Ministry for Ecological Transition, 2019. Air Quality Database. Directorate General of Biodiversity and Environmental Quality Data provided by means of express request

2.1.1 EMISSIONS AND AIR QUALITY

Mean annual O_3 concentration

The indicator corresponding to ozone (O_3) shows the percentage of stations with sufficient data volume included in each one of the three reference ranges into which the maximum daily values of eight-hour running average are divided, which, for the protection of human health, must not exceed more than 25 times the average values within a term of three years (corresponding to the Target Value, TV) and within a term of one calendar year (corresponding to the Long Term Target, LTT). These ranges are:

- O_3 concentrations lower or equal to LTT (120 µg/m³)
- O_3 concentrations between the LTT and the TV
- O_3 concentrations higher than the TV (120 µg/m³ and 25 exceedances in 3 years)

Justification

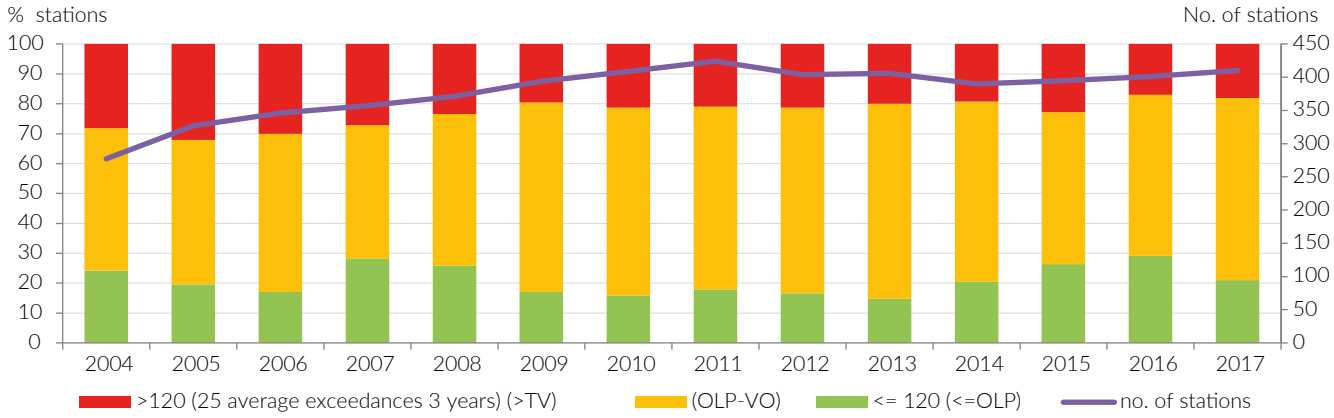
See justification in the indicator: Mean annual concentration of NO_2

Due to high insolation and the emission of precursors (NO_x y NMVOCs primarily) high ozone levels continued to be recorded in suburban and rural areas far from the sources of emission in 2017.

Of the 126 areas where ozone was evaluated in relation to health protection, 36 areas were registered with values in excess of the TV while 78 areas met the TV and the LTT. 12 zones were identified below the LTT.

In relation to protection of vegetation, 95 areas were evaluated of which 55 recorded values above the target value while 20 of them recorded values between the target value and the long term target with another 20 below the long term target.

Mean annual concentration of PM10: stations used in the assessment of air quality classified according to the different ranges established in the legislation (% and total no. of stations)



Source: MITECO.

As a percentage of stations, 2017 showed proportions very similar to those of 2014, with more than 20% of the stations between this value and the TV and 18% of the stations showed values in excess of TV. This last percentage, which represents more unfavourable levels of ozone, was higher than 2016's which was 17%.
In 2017 the evaluation of ozone was conducted at 410 stations, a figure 1.5 times bigger than the 277 used in 2004.

Source: Ministry for Ecological Transition, 2019. Air Quality Database. Directorate General of Biodiversity and Environmental Quality Data provided by means of express request

2.1.1 EMISSIONS AND AIR QUALITY

Regional background air quality: mean concentrations of SO_2, NO_2, PM2.5, PM10 and O_3

The indicator shows the mean annual concentrations of SO_2, NO_2, PM10, PM2.5 and O_3 in the stations included in the EMEP/VAG/CAMP network (network described in the section "Clarification notes" in Appendix I).

Justification

The evaluation of atmospheric pollution at regional level in three areas isolated from the direct emission points through representative stations allows for the monitoring of the level of regional pollution due to anthropogenic, natural, regional, or cross-border sources located at great distances.

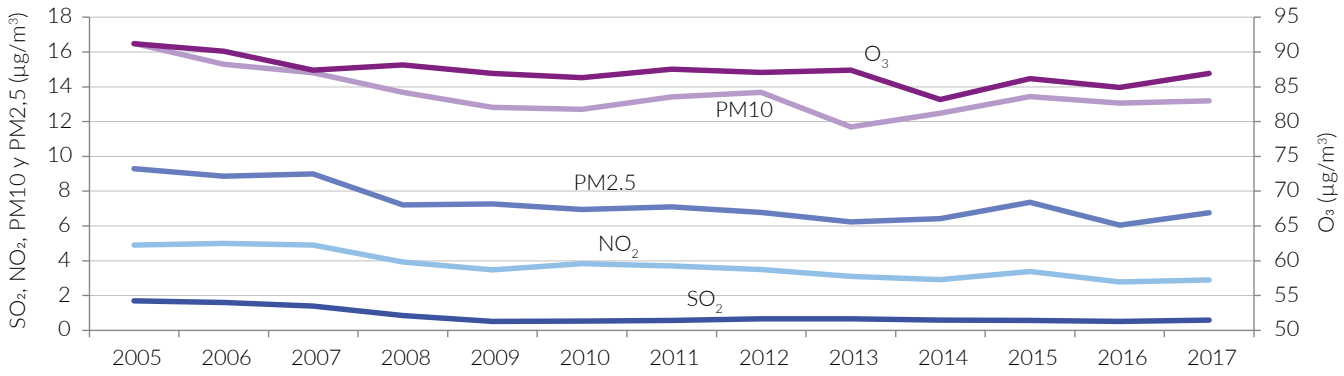
This indicator complies with the obligations arising from the EMEP Strategy and the VAG and CAMP Programmes and allows for the monitoring of the SDGs (objectives 3 and 11).

The *Air Quality in Spain Report* for 2017, prepared by the Ministry for Ecological Transition shows a drop in air quality with respect to the situation in the year 2016 with an increase in the number of areas where legislated values were exceeded for different pollutants.

This is also evident at background stations where the average concentration of each of the five pollutants analysed has risen to a greater or lesser extent than in 2017. The increase of 13.7 % in the average hourly concentration of SO_2 and of 11.6 % in the average daily concentration of PM2.5.

In any case, in 2017 it was noted that the values registered for SO_2, NO_2 (also NO_x) were low, without the legislative values for health protection or vegetation protection being exceeded. In the case of ozone, in relation to health protection, only two stations registered exceedances of the information threshold and one of the alert threshold. Most notable of all is that all of these stations exceeded the objective value for vegetation protection.

Average concentration of annual averages at background stations of the EMEP Network. Particulates: daily data; SO_2 and NO_2: hourly data; O_3: daily eight-hour maximums



Source: MITECO.

If we focus on the evolution of background pollution over the last 10 years in the period 2008-2017, we see significant reductions in the mean hourly concentration values of SO_2 and NO_2, with reductions of 52.9 % and 32.7 % over that period respectively. Emissions of particulate matter have also fallen between 2008 and 2017 although to a lesser extent. PM2.5 fell 7.4 % while PM10 fell only 3.8 %. As for ozone, mean annual concentrations of the daily eight-hour maximums saw a decrease of just 1.4 % over these ten years.

Source: Ministry for Ecological Transition, 2019. Air Quality Database. Directorate General of Biodiversity and Environmental Quality Data provided by means of express request

2.1.2 ENERGY AND CLIMATE

The 25th edition of the Declaration of the World Meteorological Organization (WMO) on the state of the world climate, for 2018, puts the record elevation of sea levels in stark relief, along with the exceptionally high land and sea temperatures recorded over the last four years. The long-term warming trend continued in 2018 and the average global temperature was the fourth highest registered to date. Specifically, the 20 warmest years since records began have all occurred in the last 22 years.

According to the State Meteorological Agency (AEMET), the year 2018 stands out climatologically as a more humid year, with a summer cooler than the three previous years. However, an accumulation of longer, warm summers has been recorded in the 21st century. In Spain overall, *"summers are becoming longer, by some nine days every ten years"*. Moreover, a recent study by the international consortium World Weather Attribution titled *Heatwave in northern Europe, summer 2018*, describes how *"the probability of the heatwaves seen in northern Europe last summer is today generally more than two times higher today than if human activities had not altered the climate"*.

With regard to this, the *Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC)* warns that oceans are absorbing most of the excess heat being incorporated within the climate system. Close to the surface, ocean temperatures are increasing 0.1°C per decade and it is estimated that the average global sea level has risen 0.19 metres in the period 1901-2010.

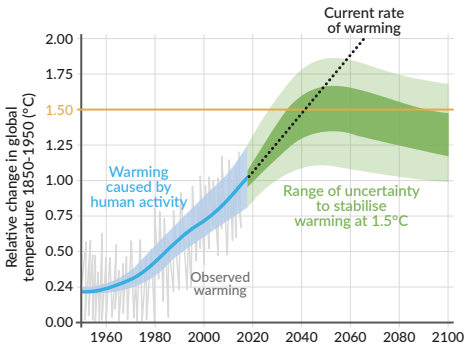
There exists a global climate challenge which constitutes a change in the model of human and economic development. There exists a broad scientific consensus around the idea that our way of producing and consuming energy is altering the global climate, which will itself lead to impacts on the planet and on socio-economic systems.

Together with the scientific consensus on the climate emergency, 2018 was a landmark year due to the emergence of the youth movement *"Fridays for Future"*. Every Friday in the month of August, Greta Thunberg, a 16-year old schoolgirl began a pupils' strike opposite the Swedish Parliament. Since then, thousands of citizens around the world, especially young people, have joined her to demand that governments around the world work together for the future of the planet.

Photo: Youth for the Climate

The Paris Agreement of 2015 and the United Nations 2030 Agenda for Sustainable Development mark the beginning of a global sustainability agenda with international cooperation and co-responsibility for what some are already referring to as a climate emergency. In 2018, the Intergovernmental Panel on Climate Change published a special report on the impact of a global warming of 1.5°C and the related carbon path. Given the relevance of said report, the Ministry for Ecological Transition published the following document *Cambio Climático: Calentamiento Global de 1,5°C: Guía resumida*, focusing on the data for the Mediterranean region.

2.1.2 ENERGY AND CLIMATE



Half a degree matters at our latitude.

- The Mediterranean region is an example of high vulnerability to climate change.
- The risk of drought can fall substantially if global warming is limited to 1.5°C.
- The risks for human and natural systems will begin to be affected if this threshold is exceeded; warming of between 1.5 and 2 °C may lead to the irreversible loss of many ecosystems.

Graphic: AEMET and OECC 2018. Climate Change: Global warming of 1.5°C: Spanish State Meteorological Agency and Spanish Office for Climate Change. Ministry for Ecological Transition, Madrid. Graphic 1, page 13.

This report states that if emissions continue at the current pace, a warming of 1.5°C would be reached between 2030 and 2052. It also warns that compliance with current mitigation commitments under the Paris Agreement is not enough to limit global warming to 1.5°C, even if complemented with ambitious large scale measures after 2030. All paths consistent with a warming of 1.5°C imply rapid reduction in global emissions of CO_2 to bring them to zero by the middle of the century, and thus constituting unprecedented actions in relation to the use of energy and other consumption habits over the next two decades. These mitigation actions are associated with multiple synergies with the Sustainable Development Goals (SDGs) but are also associated with negative factors that might affect the targets established in the SDGs if the emission reduction targets are not met.

On 3 December 2018, the United Nations Climate Change Conference 2018 (COP24) was held in Katowice (Poland), a vital encounter to continue with the historical commitment reached in the Paris Agreement to analyse the state of the implementation of commitments and accelerate climate action. The Talanoa Dialogue also took place, an occasion

At the Katowice Climate Summit in December 2018, the President of the Government ratified Spain's commitment to the Silesia Declaration on Fair Transition. This makes us the first country in the world to put in place a Fair Transition Strategy.

2.1.2 ENERGY AND CLIMATE

for joint reflection on how the parties must achieve the objectives of the Paris Agreement, despite the differences that exist between all countries and their different interests.

Since the signing of the Paris Agreement, where the European Union had a relevant role (both regulation and management) to guide the group of Member States towards ecological transition and towards a carbon neutral economy. The European Union of Energy and Climate Action seeks to abandon an economy based on fossil fuels with the aim of enabling consumers and providing a framework from which the EU can offer the adequate environment for the energy transition.

In December 2018 the directives on energy efficiency, renewables and governance of the Energy Union entered into force. The Renewable Energy Directive establishes a binding reviewable objective in the EU of, at least 32 % of energy production from renewable sources by 2030. For its part, the Energy Efficiency Directive sets an objective of 32.5 % for the same year, also subject to potential review in 2023. This new *Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action*, defines how Member States will cooperate to reach the ambitious targets set, especially in the areas of renewable energy, energy efficiency and emissions. It also establishes mechanisms for control to ensure that objectives are met on time and in a coordinated manner. The new Regulation includes the requirement for Member States to prepare Integrated National Energy and Climate Plans, from 2021 to 2030, which describe how to reach the objectives.

Several initiatives have been adopted at national level and over the course of the past year in this area of climate and energy action. The development of the Strategic Energy and Climate Framework has continued, comprised of three key strategic documents for the coming years: the draft Climate Change and Energy Transition Bill, the Integrated National Energy and Climate Plan (PNIEC) 2021-2030, and the Fair Transition Strategy. These are three essential pillars whose effect ensures that Spain has a clear, binding path towards the decarbonisation of its economy. With that in mind, a regulatory framework has been designed with the range of law, a roadmap for the next decade and with a clear objective (carbon neutral by 2050) and a strategy of solidarity and support and fair transition, to ensure that people and territories take advantage of the opportunities of this transition to prevent social and territorial inequality.

Averages contemplated in the Draft Integrated National Energy and Climate Plan (Horizon 2030):

- 21 % reduction in GHG emissions with respect to 1990.
- 42 % renewables of final use of energy.
- 39.6 % improvement in energy efficiency.
- 74 % of electricity production from renewable sources.

Draft Climate Change and Energy Transition Bill. Article 3. Objectives for the reduction of greenhouse gas emissions, renewable energies and energy efficiency.

- Reduce greenhouse gas emissions of the Spanish economy as a whole by at least 20 % compared to 1990.
- Reach 35 % penetration of final energy consumption for energy from renewable sources by the year 2030.
- An electricity system with at least 70 % generated from renewable sources by the year 2030.

Improve energy efficiency by reducing primary energy consumption by at least 35 % on the baseline and in accordance with EU regulation.

Spain is one of the regions in Europe most vulnerable to climate change

This year also saw the publication of the *Fourth Annual Climate Change Adaptation Report*, compiling the results obtained in the period 2014-2018. In January 2019 the official report of the data was submitted to the European Commission within the framework of the obligations of Regulation (EU) 525/2013, the summary of which establishes estimated GHG emissions for 2017 at 340.2 million tonnes of CO_2-eq (an increase of 4,2 % on 2016), the largest year-on-year increase since 2002. On the other hand, the GHG Emissions Preview, published in June 2019, forecast a reduction of CO_2 emission in Spain of 2,2 % in 2018 compared to the previous year.

2.1.2 ENERGY AND CLIMATE

The Inter-ministerial Committee on Climate Change and Energy Transition, attached to MITECO, has begun work, responsible for the monitoring of functions and proposals that serve as the basis of decisions relating to climate change and energy, in order to ensure the best public policy management in this area. In parallel, and in line with climate governance, the Spanish Climate Action Platform has been launched, a significant contribution on the part of Spain to the Global Climate Action Agenda, which is born with the aim of fostering public-private collaboration in the fight against climate change. It is a joint initiative between the Spanish Office for Climate Change, the Spanish Group for Green Growth, Spanish Network of the Global Compact and Ecology and Development Foundation (ECODES), in its role as the executive secretariat of the "#ForClimate community (Comunidad #PorElClima)".

Among the initiatives promoted by MITECO some years ago in the fight against climate change and which have become consolidated, the implementation of different sections of the Clima Projects, promoted through the Carbon Fund for a Sustainable Economy (FES-CO_2) is particularly worthy of note. These projects are conceived to lay a path of transformation of the Spanish production system towards a low-carbon model and since its implementation in 2012 there have been almost 400 emission-reduction projects. For their part, the Plans to Boost the Environment, known as PIMAs and implemented since the year 2014, were conceived as measures to combat climate change at national level. Since being conceived, different programmes have been developed (PIMA Sun, PIMA Transport, PIMA Air, PIMA Adapt, PIMA Land, PIMA Waste and others) mobilising over 80 million euros.

The Registration of the carbon footprint, CO_2 compensation and absorption projects has been in progress since May 2014 and, since the beginning, the number of requests received has not ceased to grow every year. It has already received a total of 1 846 registration requests. Most registrations pertain to the calculation of carbon footprint which reached 1 748 requests in 2018.

Absorption projects have received 45 requests since the beginning and the number of compensation actions is 53.

Footprint registration, compensation and CO_2 absorption projects.

The Register, created through Royal Decree 163/2014 of 14 March, contains the efforts of Spanish organisations in the calculation and reduction of greenhouse gas emissions that they generate in the course of their activity, on a voluntary basis. At the same time, it facilitates the possibility of compensating for all or part of their carbon footprint through a series of forestry projects throughout the country. These projects combine numerous environmental and social benefits and, among them the absorption of carbon dioxide from the atmosphere, also known as carbon sequestration.

Among the collaborative initiatives that are being developed in relation to climate change, the "LIFE SHARA project" (Awareness and Knowledge for Adapting to Climate Change), is already half-way through its development. LIFE SHARA works on improving the capacity of AdapteCCa (platform for the consultation and exchange of information in relation to adapting to climate change); strengthening of technical capacities for the adaptation and raising of awareness; and the strengthening in coordination and cooperation among key stakeholders (private sector, Spanish and Portuguese public administrations).

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The **LIFE SHARA project (Sharing Awareness and Governance of Adaptation to Climate Change in Spain, 2016-2011)** aims to strengthen governance of adaptation to Climate Change and increase resilience to climate change in Spain and Portugal in line with the European Adaptation Strategy.

Two very specific results are expected in the area of cooperation: one between Spain and Portugal, project partners, to strengthen the exchange of information on the shared vulnerabilities and identify priorities and common actions; and another with the European Environment Agency, for the reinforcement of synergies between AdapteCCa and Climate-ADAPT *(The European Climate Adaptation Platform Climate-ADAPT)*. Finally, the action to assess the Spanish National Climate Change Adaptation Plan will produce the first adaptation impact assessment in Spain in the life of this Plan.

2.1.2 ENERGY AND CLIMATE

Primary energy consumption

The indicator of primary energy consumption shows the energy needed from any natural source for its transformation into final energy (direct use).

Justification

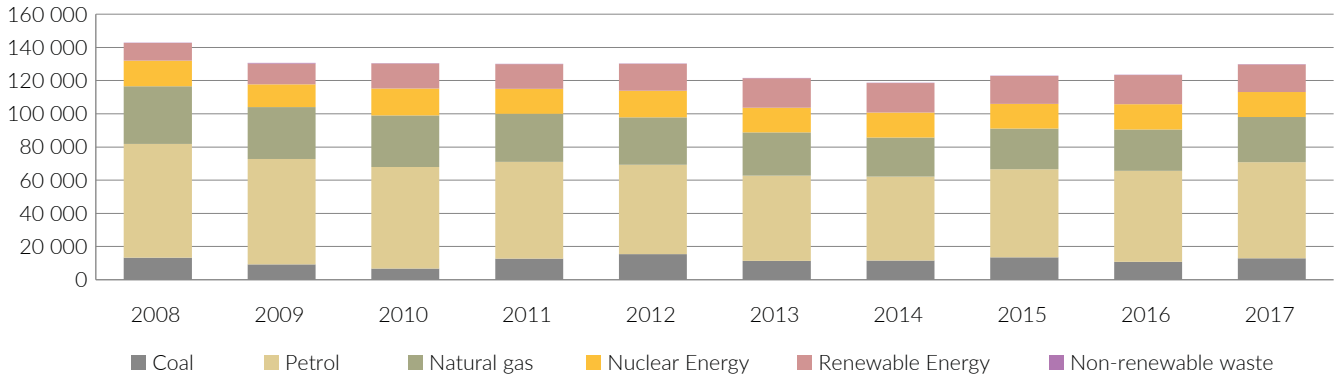
Primary energy is an indicator that is used to monitor energy efficiency measures. The reduction of energy consumption and waste is increasingly more important, not only in terms of supply and environmental sustainability but also in terms of competitiveness.

The indicator allows for the direct monitoring of the binding climate strategies and objectives of the European Union: The package of measures on climate and energy up to 2020 and the framework on climate and energy for 2030 and the roadmap towards a low-carbon economy by 2050. In Spain, this indicator allows for the monitoring of the Spanish Strategy for Climate Change and Clean Energy, Horizon 2007-2012-2020 and the future Strategic Framework for Energy and Climate. It also allows for the monitoring of the Energy Efficiency Action Plan 2017-2020, as well as constituting a key indicator for the future Strategic Framework for Energy and Climate. The indicator allows for the monitoring of the 7th EAP (primary objective 2) and SDGs (goal 7).

In 2017, primary energy consumption in Spain stood at 130 739 kilotons of oil equivalent (ktoe) and this constituted an increase of 5.3 % (6 534 ktoe) on 2016. Taking the series for the last ten years (2008-2017), there is a gradual decrease up to 2014 (118.4 mtoe), below the 130 mtoe established by the EU in the trend reduction target and below the 119.9 mtoe established in the National Energy Efficiency Plan for the period 2014-2020, followed by a slight increase in recent years, although the period 2008 to 2017 did produce a reduction in consumption of 7.9 %.

Taking into account the sources of primary energy, it is observed that petroleum and its derivatives constituted 44.3 % of total consumption of this type of energy in Spain, with a decrease and subsequent spike from 2015, similar to the dynamic described above. In second place is natural gas (20.9 %) followed by renewable sources (12.6 %), nuclear energy (11.6 %) and carbon (9.8 %). In a comparison between 2008 and 2017, consumption of all sources fell, except renewables (increase of 56.5 %), with the biggest reductions in natural gas (21.9 %) and petroleum (15.4 %).

Primary energy consumption (ktoe)



Source: MITECO

Trend Analysis

ENERGY AND CLIMATE	TREND 2010-2017	TREND PAST YEAR	OBJECTIVES OF DIFFERENT PLANS AND STRATEGIES	OBJECTIVES OUTLOOK
Evolution of primary energy consumption	○	○	National Energy Efficiency Action Plan 2017-2020 (indicative objectives): Primary energy consumption forecast for 2020 stands at around 122.6 mtoe	○

Source: Eurostat, 2019. Statistics on total energy supply. Consult at: https://ec.europa.eu/eurostat/web/energy/overview
Ministry for Ecological Transition, 2019. La Energía en España 2017. Consult at: https://energia.gob.es/balances/Balances/Paginas/Balances.aspx

2.1.2 ENERGY AND CLIMATE

Final energy consumption

The indicator for final energy consumption shows energy supplied to the consumer to be converted in useful energy, whether it is for energy or non-energy uses. Primary energy is an indicator that is used to monitor energy efficiency measures.

Justification

Faced with the increase in energy consumption needs, the need to integrate energy efficiency as a key pillar of a country's energy policy is an increasingly urgent need, not only in terms of supply and environmental sustainability but also in terms of competitiveness.

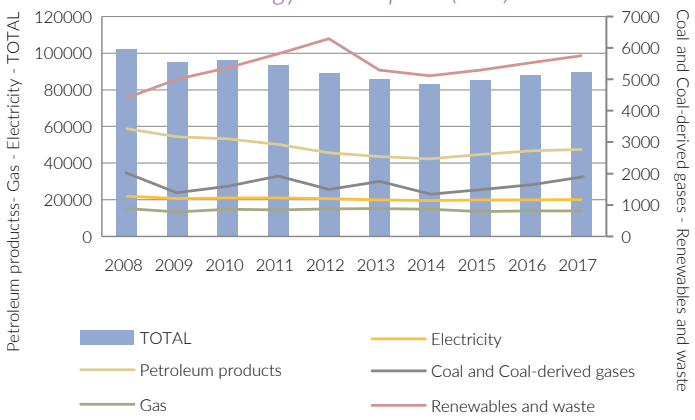
The indicator allows for the direct monitoring of the binding climate strategies and objectives of the European Union: The package of measures on climate and energy up to 2020 and the framework on climate and energy for 2030. In Spain, this indicator allows for the monitoring of the National Energy Efficiency Action Plan 2017-2020. It is also a key indicator for the future Strategic Framework for Energy and Climate.

The indicator allows for the monitoring of the 7th EAP (primary objective 2) and the SDGs (goal 7).

In 2017 final energy consumption in Spain totalled 89 162 ktoe and represented 7.4 % of total consumption for the EU-28, which constitutes an increase of 1.7 % (1 465 ktoe) on 2016. The period 2004 to 2017 saw accumulated final energy savings of 14 112 ktep, closing in on the target saving of 15 979 ktoe for 2020 set by Europe.

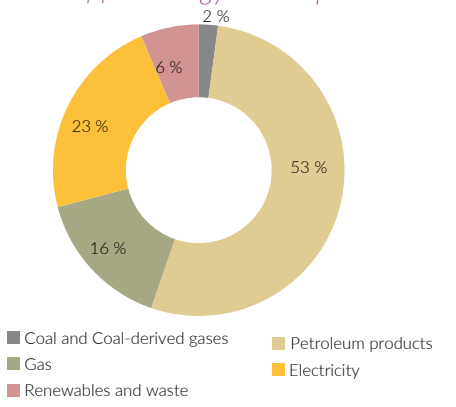
The breakdown of the demand for 2017 showed that the petroleum product sector represented approximately half of final energy consumption (47 409 ktoe and 53.2 %) followed by electricity (22.6 %) and gas (15.6 %). Representing 6.4 % of final consumption in 2017, renewable energies are a growth sector which recorded its record for consumption in 2012, while 2017 was the third highest year in terms of consumption in the historical series. The sectors for carbon and derivative gases represented 2.1 % of demanded energy. In the final decade (2008-2017) and in percentage terms, demand has fallen in all sectors (highlighting the fall-off of 19.3 % for petroleum products in particular) except renewable energies, for which demand has risen by 30.4 %.

Final energy consumption (ktoe)



Source: MITECO

Distribution of final energy consumption 2017



Source: MITECO

Trend Analysis

ENERGY AND CLIMATE	TREND 2010-2017	TREND PAST YEAR	OBJECTIVES OF DIFFERENT PLANS AND STRATEGIES	OBJECTIVES OUTLOOK
Evolution of final energy consumption	○	○	• Package of measures on climate and energy up to 2020 (EU). Directive 2012/27/EU y National Energy Efficiency Action Plan 2017-2020 • Period 2014-2020. Accumulated final energy savings of 15 979 ktoe, which is equivalent to 571 ktoe/year of new and additional final energy savings.	○

Source: Eurostat, 2019. *Statistics on simplified energy balances*. Consult at: https://ec.europa.eu/eurostat/data/database
Ministry for Ecological Transition, 2019. *La Energía en España 2017*. Consult at: https://energia.gob.es/balances/Balances/Paginas/Balances.aspx

2.1.2 ENERGY AND CLIMATE

Generation of electricity from renewable sources

The indicator reflects the production of electricity from different renewable sources during the period 2008-2017, expressed in gigawatt hours (GWh).

Justification

The role of renewable energies is key for reaching energy security, as is their contribution to the decarbonisation of the energy system. The indicator allows for the direct monitoring of the binding climate strategies and objectives of the European Union: The package of measures on climate and energy up to 2020 and the framework on climate and energy for 2030. In Spain, this indicator allows for the monitoring of the National Energy Efficiency Action Plan 2017-2020 and the National Renewable Energies Plan (2011-2020). It is also a key indicator for the future Strategic Framework for Energy and Climate.

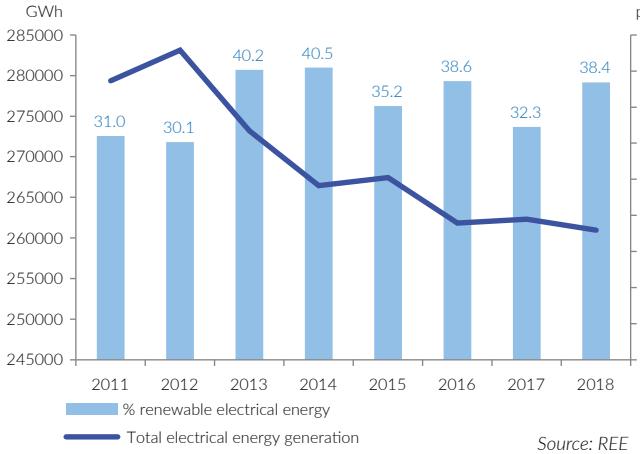
The indicator allows for the monitoring of the 7th EAP (primary objective 2) and SDGs (goal 7).

In accordance with the information provided by the grid operator, Red Eléctrica de España, the production of electricity from renewable sources in 2018 was 100 314 GWh, an increase of 18.6% on the figure for 2017 (84 611 GWh). This value implies that the supply of electricity from renewable sources as a percentage of total electricity production in Spain was 38.4 % and 6.1 % higher than in 2017. In the case of the autonomous communities (2018), Castile and León produced the highest proportion of electricity from renewable sources, with 76.8 % followed by Navarre (69.7 %), Aragon (56.3 %),Galicia (55.4 %) and Castile-La Mancha (52.3 %). Those with the lowest proportion of renewables were Ceuta (0,0 %), Melilla (2,5 %), the Balearic Islands (5,3 %) and the Canary Islands (10,5 %).

Analysing the sources of renewable energy production (2017 data), wind energy is the major source with 56.7 % of total production (47 897 GWh). Production from hydraulic sources fluctuates significantly within the historic series, having reached 43.7 % in 2010 but accounting for just 21.7 % in 2017 (18 364 GWh). Thirdly, electricity from solar sources grew constantly, with photovoltaic representing 9.9 % and thermal 6.3 %.

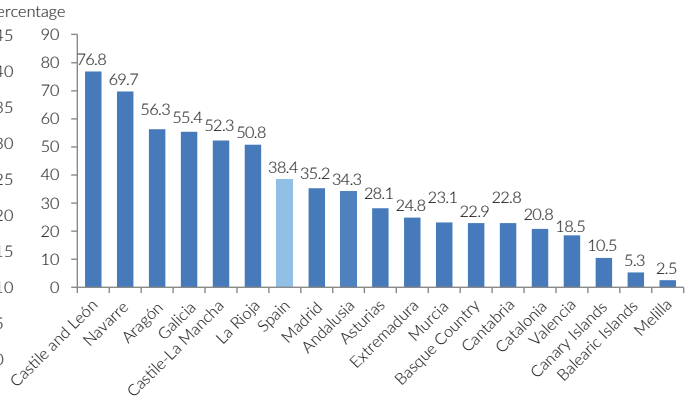
The meteorological conditions of each year condition production from some of these sources, as in the case of hydroelectric energy, even though total installed power has grown annually in the last decade.

Total electricity production and percentage of renewable sources in Spain



Source: REE

Electricity production from renewable sources with respect to total electricity production (%), 2018



Source: REE

Renewable energy production in the European Union in 2017 was 915 689 GWh according to data from the ENTSO-E association (European Network of Transmission System Operators for Electricity), which constitutes an increase of 9 174 GWh on 2016 (1 % more). This figure included the 28 EU Member States except Malta. Germany led production in this area, with 22.5 % of the total, followed by Italy (11.3 %), Sweden (9.9 %), France (9.7 %) and Spain (9.2 %).

Source: Red Eléctrica de España, 2019. Las energías renovables en el sistema eléctrico español 2017.
Consult at: https://www.ree.es/es/estadisticas-del-sistema-electrico-espanol/informe-de-energias-renovables/informe-2017
Data provided by Red Eléctrica de España on request

2.1.2 ENERGY AND CLIMATE

Energy dependency

The indicator reflects the capacity of self-supply of energy, that is, the degree to which the economy is based on its resources to satisfy energy needs. It is calculated as the net balance between energy imports and exports divided by gross available energy.

Justification

The supply of safe, clean and efficient energy to consumer sectors involves significant technological challenges and difficulties around what is referred to as energy security. This entails, among other measures, reducing dependency, especially on the importation of fossil fuels.

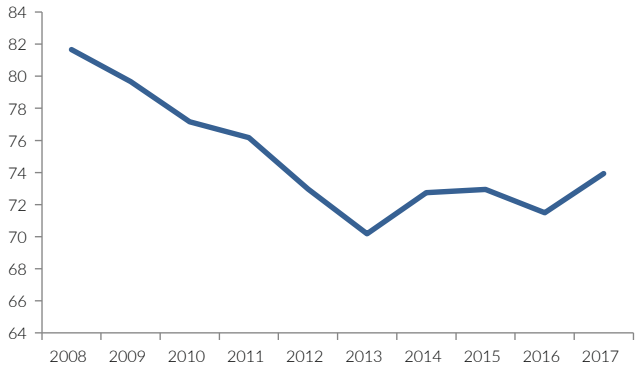
The indicator allows for the direct monitoring of the binding climate strategies and objectives of the European Union: The package of measures on climate and energy up to 2020 and the framework on climate and energy for 2030. In Spain, this indicator allows for the monitoring of the National Energy Efficiency Action Plan 2017-2020. It is also a key indicator for the future Strategic Framework for Energy and Climate.

The indicator allows for the monitoring of the 7th EAP (primary objective 2) and SDGs (goal 7).

Energy dependency assesses the need to import energy from other countries to satisfy the needs of a country or specific region. Expressed as a percentage, values close to zero express a very low energy dependency, while those close to 100 express higher dependency sustained by imports. In the case of negative numbers, exports exceed imports. This is not the case in any European Union country as, to a greater or lesser extent, all countries need to import energy to meet demand.

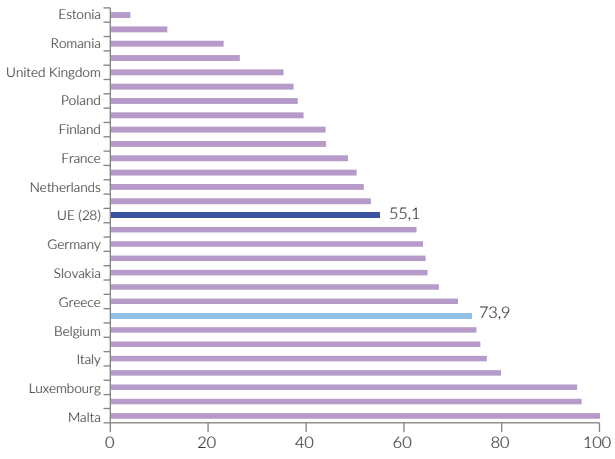
In the case of Spain, the period 2008-2017 saw a downward trend for the indicator with the lowest level recorded in 2013 (70.2 %) and some spikes in previous years. In comparison to 2016, import dependency increased by 2.5 percentage points, while the comparison between the year 2008 and 2017 shows that the percentage dependency has fallen 7.7 percentage points. The ratio of more than 70 % energy dependency is due to the importation of fossil fuels in the energy mix (carbon, petroleum and gas), in the absence of domestic production of these fuels, which has major economic repercussions.

Percentage of energy dependency in Spain (%)



Source: Eurostat

Percentage of energy dependency in the EU (2017)



Source: Eurostat

In 2017, average energy dependency in the EU, according to the data from Eurostat, was 55.1 %, which represented an increase of this percentage of 1.3 percentage points compared to the 2016 data. In the period 2008-2017, the EU presented percentages of between 55-53, and therefore it remained stable in this period. The countries with the lowest external energy dependency in 2017 were Estonia (4.1 %), Denmark (11.7 %), Romania (23.1 %) and Sweden (26.4 %). Spain stands at around 73.9 %, with the countries with the highest levels being Malta (100 %). Cyprus (96.3 %), Luxembourg (95.4 %) and Portugal (79.9 %).

Source: Eurostat, 2019. Statistics on import dependency.
Consult at: https://ec.europa.eu/eurostat/data/database

2.1.2 ENERGY AND CLIMATE

Guarantees of origin and electricity labelling

The indicator expresses the evolution of the number of companies that adhere to the Guarantee of Origin and Electricity Labelling System and the certified production, expressed in Gigawatt-hours (GWh).

Justification

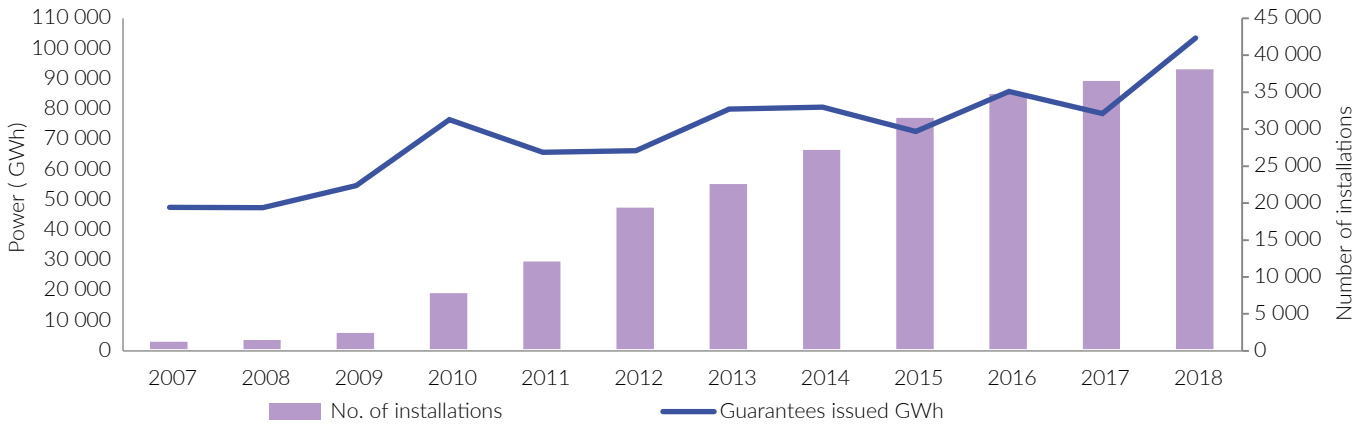
The Guarantees of Origin (GoO) are an instrument that certifies that a quantity of electricity has been produced from high-efficiency renewable or cogeneration sources within Spain and that provides information on the environmental impact associated with production.

The indicator allows for the direct monitoring of the binding climate strategies and objectives of the European Union: The package of measures on climate and energy up to 2020 and the framework on climate and energy for 2030. In Spain, this indicator allows for the monitoring of the National Energy Efficiency Action Plan 2017-2020 and the National Renewable Energies Plan (2011-2020). It is also a key indicator for the future Strategic Framework for Energy and Climate.

In 2018 the National Committee of National Commission on Markets and Competition (CNMC) certified a total of 38 229 facilities and a power of 48 087 MW within the Guarantee of Origin and Electricity Labelling System. In relative terms, this was the year with the lowest annual increase in the number of facilities adhering to the Guarantee of Origin System (4.3 %) since its creation in 2007.

The guarantees issued for this year 2018 reached 103 465 GWh, 89.3% of which were for renewable energies and 10.7 % for cogeneration, a proportion that has changed from the previous year when 97.7% corresponded to renewable energy and 2.3% to cogeneration. The guarantees issued have increased by 31%, while the representation of renewables in the System of Origin increased in a smaller proportion than that of 2017. The facilities that increased the most in number are natural gas and biomass cogeneration plants (258.3 and 406.5 % respectively) with cogeneration (especially Natural Gas and Fuel oil) the categories that have increased most in the concept of guarantees issued (from 1 803 to 11 115 GWh).

Guarantees of origin 2007-2018



Source: CNMC

With regard to electricity, the main contribution in the production mix in 2018 was from renewable (38.2 %), followed by nuclear (20.7 %), carbon (14.5 %) and cogeneration of natural gas (11.7 %). This contrasts with the market mix, where renewable energies represent 4.9 %, with greater representation for all other sources except high-efficiency cogeneration. Consequently, the market mix pollutes more than the production mix.

Source: National Committee for Markets and Competition, 2019. Informes de Garantías y Etiquetado de Electricidad (2007-2018).Consult at: https://gdo.cnmc.es/CNE/resumenGdo.do?informe=garantias_etiquetado_electricidad

2.1.2 ENERGY AND CLIMATE

Drought periods

The indicator compares the average annual rainfall for the period 1947-2018 with the average situation established for a 30-year reference period (1981-2010) which gives rise to a general classification ranging from different levels of drought-humidity based on precipitation levels.

Justification

Drought is an extreme phenomenon whose geographic and temporal boundaries are difficult to determine and may become a natural disaster where the capacity to manage hydraulic resources does not exist. The effects of climate change lead to a scenario of a general increase in the severity of drought, both meteorological and hydrological, due to the combined effects of reduced rainfall and the increase in evapotranspiration.

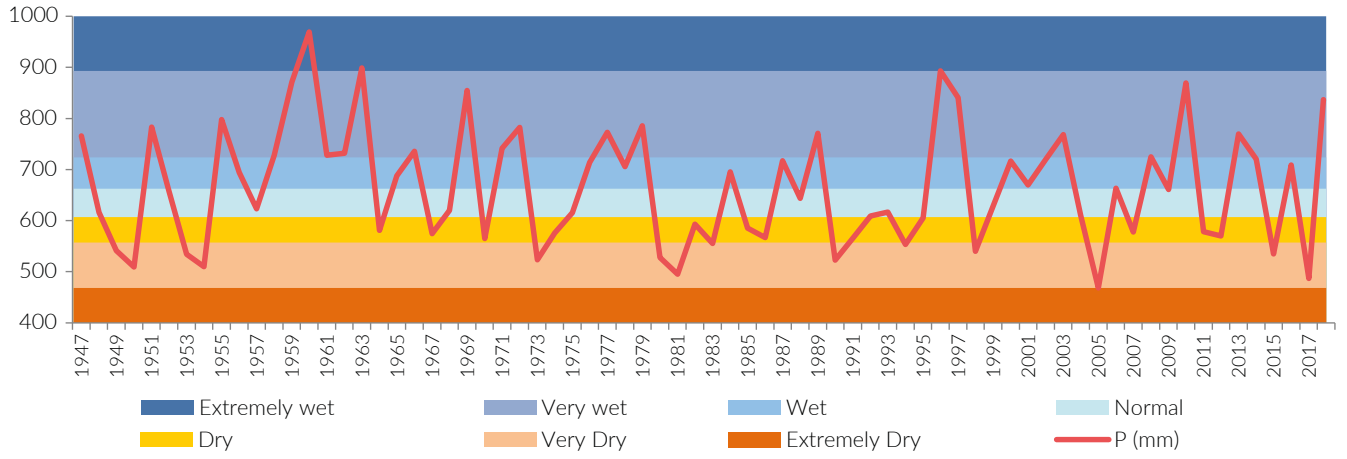
The indicator allows for the monitoring of the binding climate strategies and objectives of the European Union: The package of measures on climate and energy up to 2020 and the framework on climate and energy for 2030 and the road map towards a low-carbon economy by 2050. In Spain, this indicator allows for the monitoring of the Spanish Strategy for Climate Change and Clean Energy. Horizon 2007-2012-2020 and the future Strategic Framework for Energy and Climate.

The indicator allows for the monitoring of the SDGs (goals 2 and 15).

In 2018 (data still provisional), average annual precipitation in Spain was 837.1 mm and experienced an increase of 350.5 mm with respect to the year 2017, which in percentage terms is an increase of 72 %. If 2017 was the second driest year in the series analysed, 2018 was the sixth wettest year in the same series (1947-2018), which is a considerable contrast.

According to the established intervals, the year 2018 was considered very wet across Spain. From the total number of years analysed (72) in 11 of them (15.3 %) the precipitation level is considered normal according to the intervals established previously and in 35 of them (48.6 %) precipitation is more than normal. In the remaining 26 years (36.1 %) precipitation was lower than normal (one of the extremely dry years was 2005).

Average annual precipitation 1947-2018 (mm)



Source: prepared by the authors with data from AEMET

The State Meteorological Agency (AEMET) establishes the period 1981-2010 as representative of the precipitations regime and the following classification of how wet a year is established through the percentiles at the following intervals:

- Extremely dry (precipitation under 468.2 mm)
- Very dry (between 557.1 and 468.2 mm)
- Dry (between 606.9 and 557.1 mm)
- Normal (between 662,5 and 606,9 mm),
- Wet (between 723,8 and 662,5 mm),
- Very wet (between 893.3 and 723.8 mm)
- Extremely wet (precipitation over 893.3 mm)

Source: Prepared by the authors with data from the State Meteorological Agency (AEMET). Data provided on the request.

2.1.2 ENERGY AND CLIMATE

Carbon footprint register, compensation and absorption projects

The indicator shows the number of carbon footprint and carbon dioxide absorption and compensation projects registered annually in the Carbon Footprint, Compensation and Absorption Project Register. Both the total number of entries and of carbon footprint entries from May 2014 to December 2018 are presented by sector.

Justification

The carbon footprint register, compensation and absorption projects, was introduced in order to promote the calculation and reduction of the carbon footprint on the part of Spanish organisations and to promote the projects that improve the capacity of the Spanish sink, making it a measure to fight climate change on a horizontal basis.

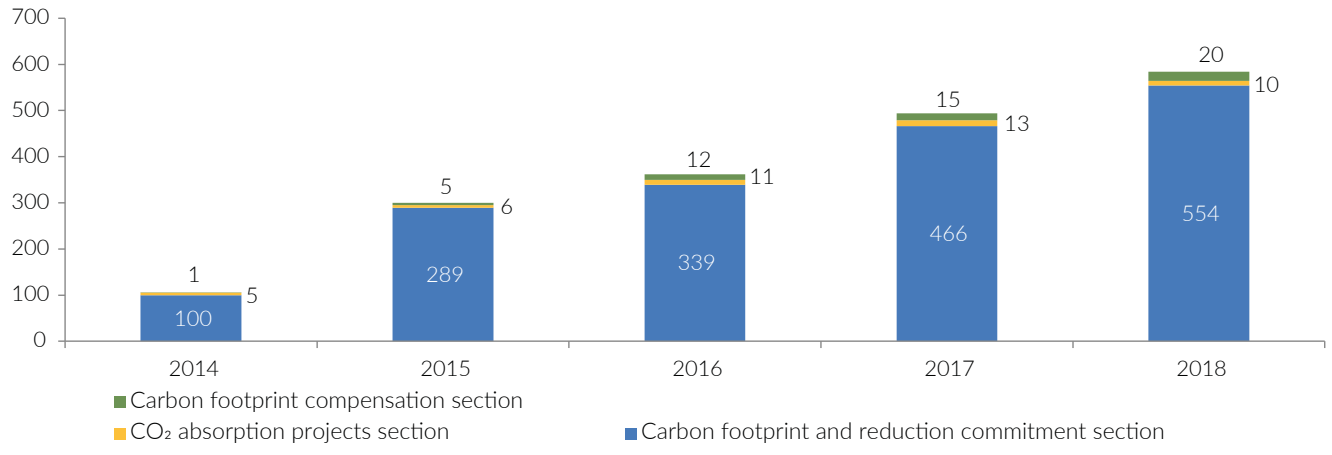
The indicator reflects the level of involvement of the companies in policies for the mitigation of climate change and decarbonisation of the economy.

The carbon footprint compensation and absorption projects register was implemented in 2014. Since then, the number of requests received has not ceased to increase every year, with a total of 1 846 entry requests received to date.

The register has three sections: a) Carbon footprint and reduction commitment section, b) Carbon dioxide absorption project section and, c) Carbon footprint compensation section. The entries are mostly carbon footprints, reaching 1 748 requests, 45 requests have been received for absorption projects and 53 for compensation projects.

With regard to the evolution of the demand for requests, these increased by 21 % in 2016 and 36 % in 2017. In 2018 the increase of requests received with respect to 2017 was 18 %, even though it must be noted that this more moderate increase was due to the unification criteria of carbon footprints in the general register. The increase for the period 2014-2018 was 451 %.

Carbon footprint, compensation and absorption project registration requests. Distributed by year and type of register section



Source: MITECO

The most consolidated section was the carbon footprint section. Similarly, the compensation and absorption projects sections are acquiring greater importance among organisations that work in the area of forestry, and have broadened the extent of their environmental commitments or have already entered one or several carbon footprints that they have reduced and who wish to complete the recognition within the register.

Source: Ministry for Ecological Transition, 2019. "Registro de huella de carbono, compensación y proyectos de absorción de dióxido de carbono
INFORME ANUAL 2018". https://www.miteco.gob.es/es/cambio-climatico/temas/mitigacion-politicas-y-medidas/que_es_Registro.aspx

2.1.2 ENERGY AND CLIMATE

Spanish Carbon Fund 'Clima Projects'

This indicator shows the number of contracts corresponding to the Spanish Carbon Fund for Sustainable Economy (FES CO_2) 'Clima Projects' selected each year and their distribution by sector. It presents data for the editions developed so far (2012-2018).

Justification

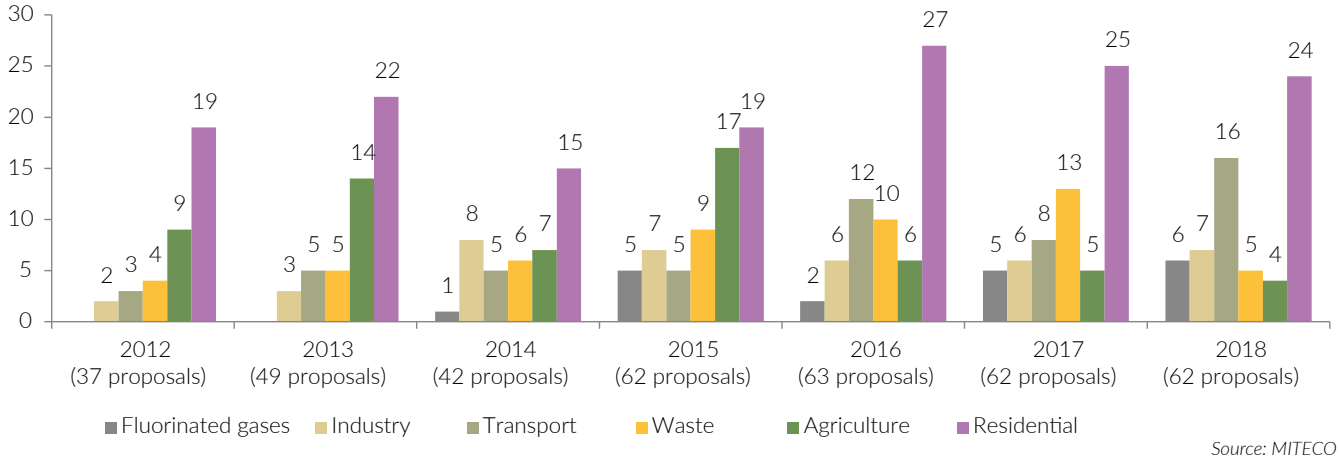
The decarbonisation of the economy is a complex goal that involves acting in a transversal and multisectoral manner to improve energy efficiency of productive sectors and prevent the emission of greenhouse gases (GHGs).

The indicator allows for the monitoring of the binding climate strategies and objectives of the European Union: The package of measures on climate and energy up to 2020 and the framework on climate and energy for 2030 and the road map towards a low-carbon economy by 2050. In Spain, this indicator allows for the monitoring of the Spanish Strategy for Climate Change and Clean Energy. Horizon 2007-2012-2020 and the future Strategic Framework for Energy and Climate.

The Clima Projects for the reduction of emissions number almost 400, since this initiative was put in place. Specifically, more than 377 emission reduction projects have been financed as examples of a green economy and a low-carbon society. With the aim of reducing emissions in diffuse sectors (not subject to the European emission rights trading scheme) the sectors included are transport, residential, waste, agriculture and livestock, industries not included in the regime for the trade of emission rights and fluorinated gases.

As a result of the 2018 Call, 62 Clima Projects and Programmes were identified whose promoters have formalised the respective contracts through which the FES - CO_2 will acquire the reductions of the verified emissions that they generate. The residential sector continues to lead the number of proposals selected with a total of 24 proposals and represents 38.7 % of the total proposals admitted. It is followed by the transport sector, with 16 proposals selected representing 25.8 % of the total. Then comes the industrial sector (11.3 %), fluorinated gases (9.7 %), waste (8.1 %) and agriculture (6.5 %).

Sectoral distribution of the number of contracts of selected Climate Projects



Source: MITECO

Since 2015, the total number of projects selected has been maintained at 62 projects and has risen 68 % since 2012. The total number of projects and programmes selected for the residential sector has fallen 4 % in 2018 compared to the previous year, while the transport sector experienced an increase of 100 % on the previous year. The agriculture and waste sectors registered sharp reductions of proposals in this last call (20 % and 65 % fewer respectively).

Source: Ministry for Ecological Transition, 2019. "Proyectos Clima del Fond de Carbono FES-CO_2.
Consult at: https://www.miteco.gob.es/es/cambio-climatico/temas/proyectos-clima/

2.2 NATURE

2.2.1 Natural environment

- Protected Areas
- Forest land and other forest formations
- Forest defoliation
- Forest fires
- Environmental monitoring

2.2.2 Soil

- Urban plot and built plot surface variation in the period 2009-2018
- Soil Loss due to erosion

2.2.3 Coasts and marine environment

- Litter in beaches
- Spanish Network of Marine Protected Areas (RAMPE)
- Quality of coastal bathing water

2.2.4 Water

- Water consumption
- Reservoir water levels
- Nitrate pollution of groundwater
- Organic pollution of rivers
- Quality of inland bathing water

2.2.1 NATURAL ENVIRONMENT

In November 2018 the Convention on Biological Diversity was held under the slogan "*Investing in Biodiversity for the People and for the Planet*", at Sharm el-Sheikh (Egypt). Among the items on the agenda were the compliance with the Aichi Biodiversity Targets and the negotiation of a global post-2020 biodiversity agreement that must complement the COP15 of the United Nations Convention on Biodiversity to be held in 2020 in Kunming, China.

Representing Spain, State Secretary for the Environment Hugo Morán participated in the High Level Segment, stressing the importance of our country's rich biodiversity and underlining the special responsibility that involves at all levels in relation to their conservation. During the meeting he announced that the Ministry for Ecological Transition (MITECO) was completing the drafting of the State Strategy on Green Infrastructure and Connectivity and Ecological Restoration, which lays down the basis for establishing a new model for territorial planning and management model that integrates economic and social development guarantees the maintenance of ecosystem services and the conservation of biodiversity.

In line with this commitment, in January 2019, MITECO, through the National Parks Network and in collaboration with the Biodiversity Foundation, an action plan that drives the development of the territories where the Reserves are located and converts these protected spaces into examples of excellency, combining nature conservation with rural development and focusing on reaching the Agenda 2030 Sustainable Development Goals.

Spain has the highest number of Biosphere Reserves in the world, with 49, which contain diverse characteristic ecosystems and landscapes and cover an area of approximately 11% of the total area of the country, with more than 5.5 million hectares and a population of almost 2 million inhabitants (4.1% of the national total).

Image: "Reservas de la Biosfera Españolas" quality brand logo

More recently, during the first week of May 2019, the 7th Plenary Meeting of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) was held in Paris. This meeting saw the approval of the *Global Assessment of Biodiversity and Ecosystem Services*, which constitutes the most complete scientific review to date on the state of the planet's natural heritage. Its conclusions will be particularly relevant in preparing the next international framework on biodiversity for the period subsequent to 2020.

The global assessment points to the following reasons, in order of relevance, for the loss of biodiversity: change in the use of land and sea, exploitation of species, climate change, pollution, and invasive exotic species.

To be able to conserve, restore and use nature in a sustainable manner while simultaneously reaching other global social objectives, the assessment indicated that it is necessary to urgently drive coordinated initiatives that promote a transformative change and enumerates five types of key interventions for that:

2.2.1 NATURAL ENVIRONMENT

1) Incentives and fostering capacities
2) Intersectoral cooperation
3) Preventive measures
4) Adoption of decisions in a context of resilience and uncertainty
5) Development of environmental law and its application

Moreover, at the meeting, the IPBES working programme up to 2030 was adopted, which centres on three priority areas to improve the coordination of the importance of biodiversity for the 2030 Agenda for Sustainable Development, making progress with the understanding of the underlying causes of the loss of biodiversity and the necessary elements for a transformation that allows changes in current trends and quantifying the effects and companies' dependency in relation to biological diversity.

The presentation of the IPBES assessment coincided with the publication of the *Eurobarometer 481 Attitudes of Europeans towards Biodiversity (European Commission)*. Both across the European Union as whole and in the survey for Spain, the percentage of people who know the meaning of the term biodiversity has increased: 41 % in both cases. 27 % of Spaniards have never heard of the term, which is four percentage points less than in the previous survey carried out in 2015.

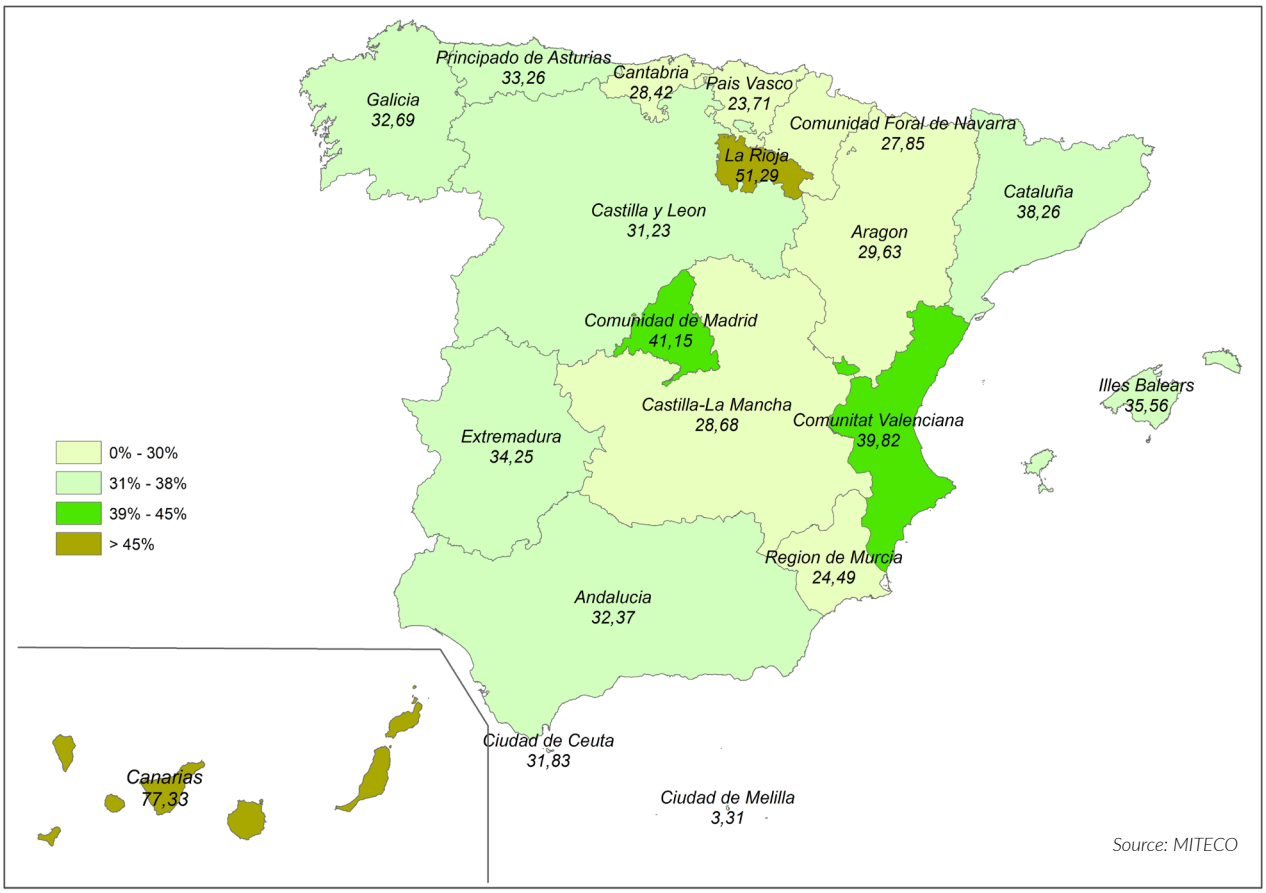
Spaniards, like other Europeans, believe that the main threat to biodiversity is air, soil and water pollution, followed by disasters caused by humans; climate change; intensive agriculture and silviculture and overfishing; the change of use of natural areas; the modification or fragmentation of natural areas by transport, energy infrastructure and the presence of invasive alien species.

For most Spaniards (51 %), the most important actions that the EU can carry out to protect biodiversity are to strengthen existing legislation on the conservation of nature and biodiversity, measures to restore nature and biodiversity to compensate for the damage caused by human activity or infrastructure (47 %), to improve the information provided to citizens (44 %), to extend protected areas (43 %) or to improve the implementation of existing legislation relating to the conservation of nature (42 %). In terms of knowledge of the Natura 2000 Network, the percentage of persons familiar with the term has fallen in Spain. Only 6 % of Spaniards know what it is, while 16 % have heard of it at some stage.

2018 marked 100 years since the declaration of Spain's first national parks: Montaña de Covadonga (today, Picos de Europa) and Valle de Ordesa (today, Ordesa y Monte Perdido) and at the end of the year, the final proposal for the declaration of the Sierra de las Nieves National Park in the province of Málaga was approved, making this, at the time of the approval of the law declaring the new national park, the sixteenth of the Spanish Network of natural spaces with the maximum level of environmental protection in the country. In February 2019, the Government approved the extension of the Archipiélago de Cabrera National Park, making it the biggest in the western Mediterranean and the biggest National Park in Spain and as a consequence of the extension, the marine surface area of the National Park rose from 4 % to 23 %.

2.2.1 NATURAL ENVIRONMENT

Terrestrial Protected Area (%) Spanish total 32.8 %



According to the study carried out by the Spanish National Research Council, published in 2018, the main threat to national park is forest fire. The research reveals that forest fires affect 60 % of the assesed spaces or the peripheral areas.

National Parks underwent fewer changes in land use and fewer forest fires than peripheral areas according to the results. Aigüestortes i Estany de Sant Maurici, in the Pyrenees in the province of Lleida; Ordesa y Monte Perdido, in the Pyrenees in the province of Huesca, and Caldera de Taburiente, on the Canary Island of La Palma, were among those showing higher environmental sustainability. However, the Teide, on the Canary Island of Tenerife, and Doñana, in Huelva, showed worrying trends, especially in peripheral areas, as pointed out by the scientists.

2018 was a very wet year in Spain with average precipitation of 808 mm, 25 % above the average annual value for the reference period 1981-2010, due primarily to the fact that the spring was extremely wet. With the information available, the year 2018 was the fifth wettest since 1965 and the second wettest so far in the 21st century, behind 2010.

This situation favoured the reduction in the number of fires in the country, reducing the hydraulic stress of vegetation, making it difficult for fire to spread and significantly reducing ignition factors, which are mostly provoked by human actions (international, negligent or accidental).

As in previous years, in 2018 Spain contributed to the fight against forest fires in neighbouring countries, principally in Portugal, as in the cases of the fires in Monchique and in Vila Real in September. Similarly, autonomous community resources in Castile and León collaborated in cross-border extinguishing tasks in the areas bordering Salamanca and Zamora.

2.2.1 NATURAL ENVIRONMENT

International collaboration must echo the effects of natural disasters not only in economic assistance for disadvantaged areas but also complementary actions that might have a special effect on our environment and biodiversity. An example of this type of commitments is how Spain received the 29 Iberian lynx evacuated from the Algarve fire in Portugal in August 2018 and that affected the National Centre for Reproduction of the Iberian Lynx in Silves (eight went to El Acebuche in Doñana, nine to Granadilla in Cáceres and twelve to La Olivilla in Jaén).

In June 2019 the Government amended the addendum to Royal Decree 139/2011 developing the List of Wildlife Species subject to the Special Protection Regime to include 27 endangered flora and fauna species in Spain, obliging the administrations to carry out monitoring of the status of conservation and the threats affecting them. For species included in this catalogue, specific plans must be executed for their conservation and recovery. The catalogue includes the populations of Iberian Wolf south of the Douro in Castile and León and Madrid in the List of Wildlife Species subject to Special Protection Regime.

2.2.1 NATURAL ENVIRONMENT

Protected areas

This indicator represents the percentage of total protected area of Spain and offers disaggregated information for each instrument of protection: Protected Natural Spaces, spaces of the Natura 2000 Network and the different areas protected by international instruments, such as the Specially Protected Areas of Mediterranean Importance (SPAMI) or the RAMSAR Convention, among others.

Justification

The indicator allows for the evaluation of progress made in Spain in the application of biodiversity management and protection instruments and, at the same time, the situation in relation to different objectives assumed via international agreements, such as the Aichi Agreement or SDG 15.1 of the 2030 Sustainable Development Goals. (Conserve and use ecosystems in a sustainable manner).

In 2018 the protected land area in Spain reached 32.82 % of the total area (16 613 036,7 ha), an increase of 0.02 % compared to the previous year. On the other hand, the protected marine area is estimated at 12 % of the total (12 886 126.6 ha), registering a considerable increase of 4.02 % on previous figures from 2017, due primarily to the declaration of the Mediterranean Cetacean Migration Corridor as a Marine Protected Area.

The surface area of Protected Natural Areas grew slightly in 2018, as did areas belonging to the Natura 2000 network, representing 14.6 % and 27.3 % of the total surface of Spain respectively. It is important to note that the Natura 2000 network surface data do not correspond to the sum of the SICs and SPAs, as there are some overlaps between both forms of protection which should not be duplicated.

With regard to areas protected under international instruments, only the Biosphere Reserves have seen a slight increase, reaching almost 11 % of the terrestrial area of Spain.

In relative terms of land area, the Canary Islands (77.3 %), La Rioja (51.3 %), Madrid (41.2 %) and Valencia (39.8 %) were the autonomous communities with the highest percentage of protected land area.

Protected area in Spain Year 2018

PROTECTION CATEGORY		LAND		MARINE		TOTAL PROTECTED AREA (HA)
		(HA)	LAND IEP (%)	(HA)	MARINE IEP (%)	
Total protected area (ha)		16 613 036.67	32.82	12 886 126.56	12.01	29 499 163.24
PNA		7 402 026.85	14.62	5 175 131.06	4.82	12 577 157.91
Natura 2000 Network		13 839 509.36	27.34	8 432 215.43	7.86	22 271 724.79
Other International Instruments	MAB	5 570 612.96	11	491 778.52	0.46	6 062 391.48
	RAMSAR	282 693.99	0.56	25 605.76	0.02	308 299.75
	SPAMI	51 857.86	0.10	96 625.70	0.09	148 483.56
	OSPAR	0	0	2 034 218.94	1.90	2 034 218.94

Source: MITECO

Trend Analysis

5-YEAR TREND	PAST YEAR TREND	OBJECTIVE	OBJECTIVE OUTLOOK
○	○	Aichi Strategic Objective C.11 For 2020 at least 17% of terrestrial and continental water areas will be conserved through protected area systems	○

Source: Banco de Datos de la Naturaleza. Directorate General of Biodiversity and Environmental Quality Ministry for Ecological Transition
Inventario Español del Patrimonio Natural y de la Biodiversidad.
https://www.miteco.gob.es/es/biodiversidad/servicios/banco-datos-naturaleza/default.aspx
https://www.miteco.gob.es/es/biodiversidad/temas/espacios-protegidos/
https://www.miteco.gob.es/es/parques-nacionales-oapn/default.aspx

2.2.1 NATURAL ENVIRONMENT

Forest land and other forest formations

The indicator shows the evolution of the area occupied by forests and other forest forrmations in Spain.

Justification

Forests perform an essential function in the water cycle, the conservation of soils, carbon fixation and the protection of habitats and biodiversity such as, for example, pollinators. At the same time, sustainable management is crucial to achieve sustainable agriculture and reach food security.

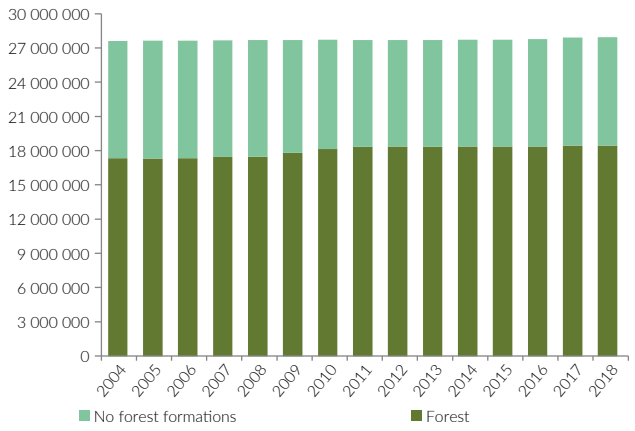
The indicator allows for the assessment of the current state of Spanish forests and their evolution over time and offers basic information relating to the monitoring of SDG 15.2 (Sustainable management of forests).

Over the last 15 years (2004-2018), the forestry area in Spain increased 1.2 % showing gradual but constant growth. Unlike the information offered in the previous year, in 2018 new data on the Canary Islands was incorporated, maintaining the data for the rest of the autonomous communities. 55.2 % of the total national area (27.9 million hectares) is comprised of mountains, of which over 66 % are forests. The remaining 9.5 million hectares are comprised of mainly unwooded areas or areas with only scattered trees. However, by analysing the percentage data in respect of the autonomous total, the average national percentage of forests stands at 36,5 %. The Basque Country (54.9 %), Catalonia (49.4 %) and Galicia (49 %) are the autonomous communities with the highest percentage of trees, while the Canaries with 18,3 %, Murcia, with 27.3 % and Castile and León with 31.3 % are those with the lowest.

In terms of distribution by species, the holm oak (*Quercus ilex*) is the most widespread species, occupying more than 27 % of Spanish forests, 2.6 million ha. As oak forest (14.2 % of the total area of our forests). It is also the dominant species of 88 % of the dehesas, accounting for another 2 million hectares. As regards coniferous trees, most of the woodland consisting purely of these species is made up of *Pinus halepensis* (2 million ha, 11.3 % of forest area), *P. pinaster* and *P. sylvestris*. Altogether, pine forests account for 28.4 % of total wooded area.

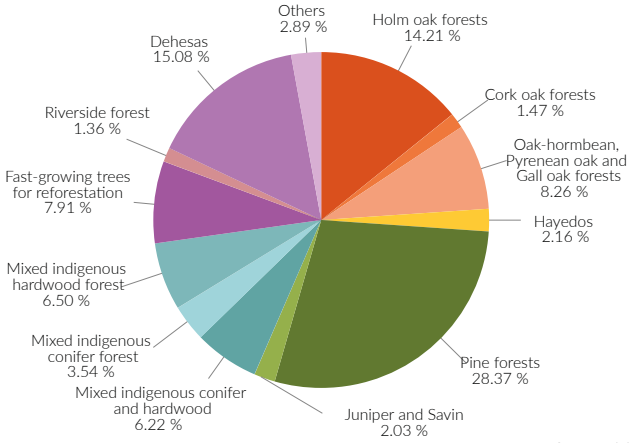
The 2018 data confirm this positive trend in the growth of Spanish forests, which has been maintained on a moderate basis for the last 15 years.

Forest area over the last 15 years



Source: MAPA

Wooded area (%)



Source: MAPA

Trend Analysis

5-YEAR TREND	PAST YEAR TREND	OBJECTIVE	OBJECTIVE OUTLOOK
●	●	ODS 15.2 Between now and 2020, promote the implementation of sustainable management of all types of forest, halt deforestation, recover degraded forests and increase forestation and reforestation considerably on a global level.	●

Source: The National Forest Inventory (IFN) and its cartography base, the Forestry Map of Spain (MFE), both prepared provincially and every ten years. IFN2 (1986- 1996); IFN3 (1997-2007); IFN4 (begun in 2008); MFE50 (1997-2007). MFE25 (begun in 2007).
National Data: Navarre, Galicia, Asturias, Cantabria, Balearic Islands, Murcia, Basque Country, La Rioja, Madrid, Catalonia, Extremadura and the Canary Islands: IFN4 and MFE25; Rest of the autonomous communities. IFN3 and MFE50.
Sub-Directorate General on Forestry Policy. Directorate General for Rural Development, Innovation and Forestry Policy. MAPAMA.

2.2.1 NATURAL ENVIRONMENT

Forest defoliation

The indicator shows the degree of defoliation of forests, providing knowledge of their phytosanitary state, its evolution through time and the main causes of their degradation.

Justification

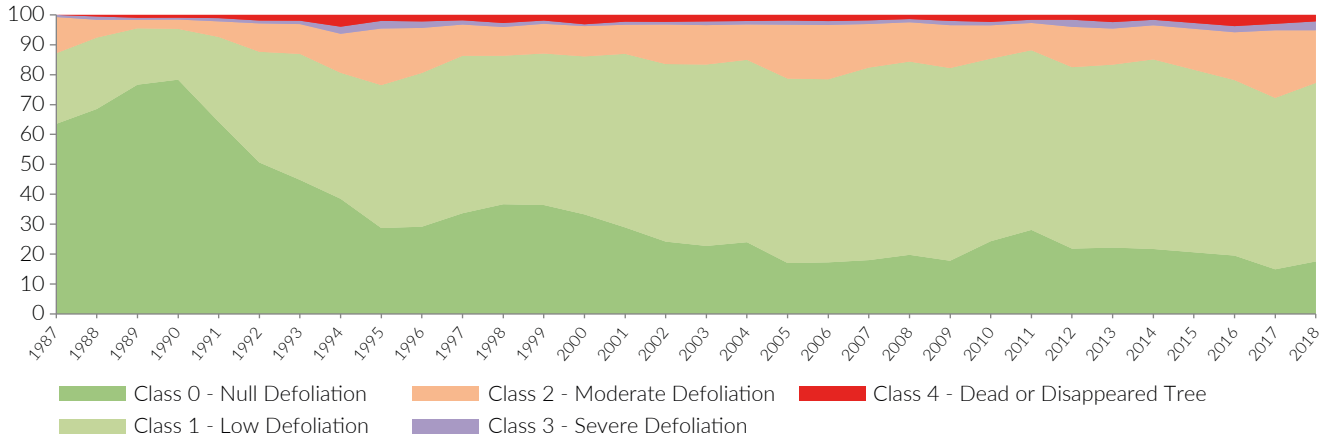
Forest defoliation is the process by which a plant species loses its leaves because of pathologic or climatic stress, provoking its premature fall. The indicator allows for the monitoring of various objectives of the 2030 Agenda, mainly SDG 15.2.1 Progress towards sustainable forest management and 15.5 Degradation and loss of biodiversity. Within the VII EAP it corresponds with indicator 4. (Forest: growing stock, increment and fellings).

In accordance with the results of the national sample, in 2018 there was an improvement in defoliation in the sample of trees inspected, recording a lower percentage value for "damaged" trees (defoliation in excess of 25 %) which this year represents 20.6 % of the sample. This means that 77.3 % of the trees studied showed a healthy appearance (class 0 and class 1) compared to 72.2 % in 2017, reversing the negative trend of previous years.

Dead trees (Class 4) fell 0.8 %, representing 2.2 % of the sample. Preventive felling and forest exploitation were the main causes for the disappearance of wooded area. Taking into account the dead trees due to damage, abiotic reasons caused more deaths than drought, snow or wind, in that order. Of the agents causing damage to trees with more than 25 % defoliation, abiotic damage constitutes 43.5 % (mainly drought), while damage caused by insects represents more than 29 %. In this case, the main cause is the presence of defoliators although damage caused by perforators (*Coroebus florentinus* and *Cerambyx sp*) is also an issue, albeit to a lesser extent.

The positive 2018 results are mainly due to the fact that the prolonged drought of previous years has abated. It is important to highlight that the period of recovery is long and is delayed several years as, even though the ratios of defoliation are more favourable than the previous campaign, the values are worse than the mean of the last five year period. The historic results for measuring defoliation in the tree sample, with a 30-year series show a fluctuating trend with successive ups and downs. Forest dynamics are slow and the data cannot be analysed on an isolated basis, but in the context of complete historic series.

Defoliation of trees by classes (IDF Spain, 1987-2018)



Source: Inventario de Daños Forestales de España. MAPA

Trend Analysis

5-YEAR TREND	PAST YEAR TREND	OBJECTIVE	OBJECTIVE OUTLOOK
○	◉	7th EAP – Conservation of sustainable forest management guaranteed in 2020. SDG 15.2.1. Progress towards sustainable forest management	◉

Source: Área de Inventario y Estadísticas Forestales (AIEF), Dirección General de Desarrollo Rural y Política Forestal. Ministry of Agriculture and Fisheries, Food and the Environment
http://www.mapama.gob.es/es/desarrollo-rural/temas/politica-forestal/inventario-cartografia/redes-europeas-seguimiento-bosques/default.aspx
http://www.icp-forests.net

2.2.1 NATURAL ENVIRONMENT

Environmental monitoring

This indicator refers to the number of interventions relating to the environment carried out by SEPRONA and the other units of the Guardia Civil.

Justification

The competencies of the Guardia Civil's Nature Protection Service (SEPRONA) include soil protection, water and atmosphere, animal health and the conservation of species of flora and fauna, hunting and fishing activities and the fight against forest fires. At the same time the Environment and Urban Planning Prosecutor works to achieve a higher degree of legal protection through investigation and prosecution of cases.

The indicator offers information that indirectly affects the objectives of the 2030 Agenda (SDG 6, 12 13 14 15).

In 2018, SEPRONA registered a total of 103 295 environmental infractions. Of these, 96.5 % (99 694 infractions) were administrative infractions, while the remaining 3 601 were criminal. Both values were lower than the number of infractions committed the previous year, with a reduction of 0.61 %, in criminal infractions and 13.05 % in administrative infractions.

On the other hand, the number of arrests rose 8.2 % compared to 2017 with a total of 3 028 arrests. The period 2004-2018 saw a total of 24 904 arrests for environmental offences.

Number of environmental infractions registered by the Guardia Civil

Source: Prepared by the authors using data from SEPRONA

The report of the General State Prosecutor for 2018 highlights that, over the course of the year 2017, their specialised environmental unit intervened in the drafting of the Spanish Action Plan against the Illegal trafficking of International Poaching of Wildlife Species, finally approved by the Council of Ministers on 14 February 2018. With this initiative a priority in the area of protection of endangered wildlife species is fulfilled while it also becomes the first national action plan in the European Union.

In 2018, the meeting of the Network of Environment and Urban Planning Prosecutors was held where the framework for action of the Public Ministry for organisation and interpretative aspects relating the prosecution of crimes against natural resources and the environment was established, specifically the issues of dumping, plundering and cruelty to animals.

Source: Data provided by the Directorate-General for Civil Protection and Emergencies. Ministry of Home Affairs.
http://www.proteccioncivil.es/riesgos/transportes/accidentes
https://www.fiscal.es/memorias/memoria2018/FISCALIA_SITE/index.html
https://www.fiscal.es/web/fiscal/-/la-fiscalia-impulsa-las-causas-judiciales-para-que-los-delitos-medioambientales-no-queden-impunes

2.2.1 NATURAL ENVIRONMENT

Forest fires

The indicator counts the number of forest fires occurring during the relevant year (period between 1 January to 31 December).

Justification

The indicator allows for the main causes that favour or reduce the risks of forest fire, much like the magnitude of same and, therefore, prove very useful for planning prevention mechanisms for these types of disasters.

At the same time, the indicator is in line with Objectives 13.1.2 (Countries that adopt and apply national strategies for the Reduction and Risk of disaster in line with the Sendai Framework for the Reduction of Risk of Disaster 2015-2030 and 15.1.1 Forest area in proportion to total area, of the 2030 Agenda for Sustainable Development).

According to the data from the *Avance informativo: Incendios Forestales 01/01/2018 - 31/12/2018* drafted by the Ministry of Agriculture, Fisheries and Food, in 2018, 25 162 hectares were burned down in the country in 7 143 fires detected, of which 1 989 were fires in excess of one hectare. There were also three large forest fires (LFF) affecting more than 500 hectares, a figure that is very low if we compared it with the 53 that occurred in 2017 or the average of 23 over the past decade.

With these figures, 2018 is one of the most positive years in terms of forest fires with a reduction of 45 % in the number of fires and 86 % in the total forest area affected compared to the previous year, making it the year with the lowest number of fires recorded since 1983, and the lowest area affected since 1963. These values have been favoured by the climate effect as, according to AEMET, the year 2018 was warm but very wet all over Spain, with average precipitation in excess of 25 % of the annual average for the reference period 1981-2010, mainly due to an extremely wet spring. In fact, it was the fifth wettest year since 1965. The wet conditions of 2018 saw a reduction in the hydraulic stress of vegetation, making it difficult for fires to spread, and a notable reduction in ignition factors, which are mostly intentional actions, negligence or human accidents.

Forest area affected by fire and number of fires, 1998-2018

Source: Prepared by the authors with data from the Avance informativo INCENDIOS FORESTALES 01/01/2018 - 31/12/2018 drafted by the Ministry of Agriculture, Fisheries and Food

89.2 % of the forest area affected by fire in 2018 was concentrated in the autonomous communities of Andalusia, Asturias, Cantabria, Castile and León, Valencia, Extremadura and Galicia, with Cantabria, at 18.3 %, being the most affected community. However, all autonomous communities showed reductions of more than 50 % in forest area affected by fire compared to the previous year, except Valencia which recorded an increase of 96% due to the Large Forest Fire (LFF) in Lluxtent, where 3 146,69 ha were burned. The other two LFFs in 2018 took place in Santa Coloma de Curueño (León) with 645 ha. and Nerva (Huelva) with 1 484,9 ha. The Mediterranean region was most affected by these types of fires, accounting for 88 % of the area affected.

Source: Prepared by the authors with data from the Avance informativo INCENDIOS FORESTALES 01/01/2018 - 31/12/2018 drafted by the Ministry of Agriculture, Fisheries and Food
https://www.mapa.gob.es/es/desarrollo-rural/estadisticas/iiff_2018_tcm30-507741.pdf

2.2.2 SOIL

Land and soil provide society with vital resources such as food, fuel, livelihood and refuge. They also provide fundamental services for the productive functions of ecosystems, reduce the risk of natural threats and provide cultural and even spiritual benefits. Through its use of soil, society alters and modifies the quantity and quality of these services and the intrinsic potential benefits to humanity. To improve the use of soil and related processes it is necessary for society to understand soil as a complex system that is absolutely indispensable to life.

The processes affecting soil related to environmental issues vary, from the change of use of soil to degradation, reduction of biodiversity, abandonment and damaging of ecosystem services. Changes in soil systems must be understood and agreed from all the perspectives, both environmental and human, integrating functional and dynamic territorial assessments to be able to tackle the complexity of the problems of these types of processes.

In 2018, the 21st World Congress of Soil Science (WCSS) was held in Rio de Janeiro, under the slogan "Soil Science: beyond food and fuel" with the participation of the Science Divisions of the International Union of Soil Sciences and SBCS (Sociedade Brasileira de Ciência do Solo). During the congress, the Director General of the WFO, José Graziano da Silva, assured attendees that, "Improving the health of the world's soils is essential to eradicate the hunger, and fight against climate change and its consequences"

RIO18
21st World Congress
of Soil Science

On the other hand, the Global Symposium on Soil Pollution 2018 brought together international experts from different bodies including the United Nations World Food Programme, the Intergovernmental Technical Panel on Soils, Global Soil Partnership, the United Nations Environment Programme and the World Health Organisation, together with independent scientific groups, political stakeholders, users and other stakeholders with the aim of assessing soil pollution, its prevention and mitigation as part of sustainable general management while also reviewing the global sustainable development and food security agendas.

During the symposium, the results of different studies were presented, describing the main risks of soil pollution to the environment and to human health, demonstrating the existence of this threat, the scant attention it receives and the challenges faced in managing and monitoring the programme. One of the main conclusions was to demonstrate that the information available in different regions in the world varies greatly and in many cases is fragmented or non-existent. Simple and affordable techniques for analysis and remediation were presented, advocating their implementation and so to determine effectiveness on a global scale.

From the perspective of compliance with the Sustainable Development Goals (SDGs), soil pollution prevention and minimisation, and remediation of previously contaminated sites were identified as priorities due to the serious threats posed to soil, nature and human health. Human activities are one of the main sources of this type of pollution, which is why it is necessary to invest in the development of more environmentally friendly industrial technologies, in the implementation of sustainable soil management techniques and the reduction of the use of hazardous chemicals and their release into the environment.

2.2.2 SOIL

The real status of global soil pollution is unknown and very few studies have been carried out in this area. Investment in soil information systems at national level and the development of local capacities are essential conditions for complying with the mandate of the Third UN General Assembly *Towards a pollution free planet* held in 2017 and where management of soil pollution was specifically identified as one of the essential issues to be tackled.

The *Joint Research Centre* (JRC) of the European Commission published the report *Status of Local Soil Contamination in Europe* in 2018, which highlighted the significant lack of information on soil pollution at European level. Many countries have reported that the lack of a common and binding reference framework generates limitations when it comes to developing national strategies. All the arguments put forward underlined the need to harmonise and implement a common soil policy that helps channel European efforts towards more viable and economically and environmentally efficient remediation mechanisms.

It is important to highlight that soil contamination also represented high economic costs due to the reduced performance and quality of the crops and the costs associated with remediation. In Europe it is estimated that there are 2.5 million potentially contaminated sites (JRC, 2018), while the cost of remediation is calculated at between 2.8 and 4.6 billion euros per year in each European country (Ernst & Young, 2013).

The 2018 WFO report *Soil Pollution A Hidden Reality* states that the focus on the importance of soil pollution has, fortunately, risen all over the world, with research on the assessment and remediation of this type of pollution growing. In accordance with the report, many countries have adopted or are in the process of adopting measures for the protection of soil, prevention of pollution and focusing on historic pollution problems.

Here in Spain, contaminated soils are regulated by *Law 22/2011, of 28 July, on waste and contaminated soil* and *Royal Decree 9/2005, of 14 January, establishing the list of potentially soil-contaminating activities and the criteria and standards for the declaration of contaminated soils.*

2.2.2 SOIL

The European Environment Agency Report of 11 October 2018 *Land systems at European level — analytical assessment framework* mentions the need to establish the assessment of soil evaluation systems implementing the model of the Drivers, Pressures, State, Impacts and Responses (DPSIR) study, within a working causal framework.

Once again, due to the lack of information, the monitoring of European soil systems has been limited to the change of land coverage. However, little by little, indicators and specific data are becoming available to allow for the completion of more systematic assessments, the creation of temporary statistical series for soil management flow through the use of monitoring data from the Copernicus service, data from the *Land Use and Coverage Area frame Survey* (LUCAS), and information from the *Land-Parcel Identification System*. This improvement in the flow of data extends the capacities of analysis of these systems to include functional impacts of the use of soil relating to the land quality, and the conditions of the ecosystems.

In 2018, the LUCAS survey on the use and occupation of soil in the European Union was carried out again at the same sampling points used in previous years (2009, 2012, 2015). This year, new parameters were added including apparent density and soil biodiversity. The analysis of apparent density will allow for estimates of the storage of organic carbon in the soils of European territory to be obtained. For their part, to assess the biodiversity of soil, DNA recognition technology will be used to obtain information on bacteria, fungi and microorganisms to explore their distribution in different climate regions and assess the impact of the use of soil on biodiversity in the EU.

Moreover, and in accordance with the progress of 6 May 2019 on the *Global Biodiversity and Ecosystem Services Platform* of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, in terrestrial and inland water ecosystems change in use of soil has had a greater relative negative impact on nature since 1970.

The expansions of agriculture is the extension of the change of land and soil use, with practically a third of the land surface being used for this purpose. At the same time, the urban area has doubled since 1992, in an unprecedented expansion of infrastructure, joined with population growth and an increase in consumption, which has mainly come at the expense of forests, wetlands and grassland.

2.2.2 SOIL

Soil use policies are essential to continue achieving successful objectives with respect to management of this important resource. Internationally, the Sustainable Development Objectives set a target of reduction of the levels of soil degradation to zero for 2050.

In Europe, the main policy that frames the conditions of use of soil is the Common Agricultural Policy, however, some recent policies also affect use of soil in subsequent years, for example the *Roadmap towards a Europe efficient in the use of the of the resources of the European Commission* which mentions that, in order to comply with the objectives set by the SDG we would need soil occupation to fall every year by an average of 800 km^2.

Other legislation that is important in relation to soil include *Regulation (EU) 2018/841 of the European Parliament and of the Council of 30 May 2018 on the inclusion of greenhouse gas emissions and absorption resulting from land use, land use change and forestry in the 2030 climate and energy framework*, , the Renewable Energy Objectives, the Natura 2000 network, the Water Framework Directive and the objective to maintain and restore ecosystems and the services of the European Biodiversity Strategy 2020.

In Spain, the draft Climate Change and Energy Transition Bill (LCCTE) will provide a regulatory and institutional framework that will facilitate and guide the decarbonisation of the Spanish economy up to 2050, as established by the EU and the commitment assumed through the signing of the Paris Agreement.

The draft Bill mentions that, with regard to national soils, work will be carried out on the integration of the risks arising from climate change in the ordering of soil uses. Measures are also envisaged for the protection of biodiversity and habitats against climate change and provisions relating to forestry policy and rural development.

2.2.2 SOIL

Urban plot and built plot surface variation in the period 2009-2018

This indicator presents the variations registered in the Land Registry of the total area of urban plots and the built area over the last decade.

Justification

By providing statistics for the change in built area over the last decade, this indicator allows us to get a clear picture of the urban ground situation in different autonomous communities and of the growth in built area plots.

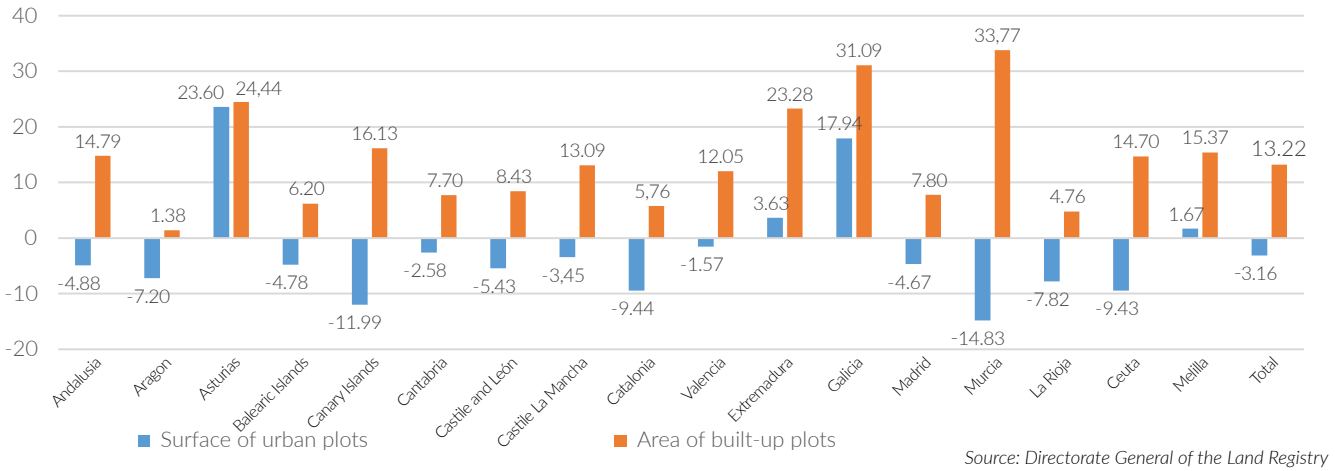
The indicator supports Strategic Objective no. 1 of the Spanish Urban Agenda 2030: (Order the territory and provide the rational use of soil, conserve it and protect it). Specifically, it is related to indicator 1.1.2. (Correlation between urban development of soil, demographic dynamics, employment and economic activities).

Similarly, the indicator provides information for the monitoring of SDG 11 (Make cities and human settlements inclusive, safe, resilient and sustainable).

The data available in the land registry statistics for 2018 indicate that 1 016 784 hectares of national territory (excluding the Basque Country and Navarre as they maintain their own land registry) correspond to urban plots, of which 64.6 % are built. These values imply a slight reduction on the 2017 figures.

In the period 2009 - 2018, the area of urban plots fell in all autonomous communities with the exception of Asturias (increase of 23.6 %), Galicia (17.6 %) Extremadura (3.6 %), and Melilla (1.7 %), representing a total reduction of 3.2 %. On the contrary, the area of built urban plots has increased in all autonomous communities, with the most significant growth observed in Murcia (33.8 %), Galicia (31.1 %), Asturias (24.4 %) and Extremadura (23.3 %).

Variation in the area of urban plots and the area of built-up plots between 2009 and 2018 (%)



Source: Directorate General of the Land Registry

In 2018 the reduction of the area of urban plots recorded was slightly lower than in 2017, however, the downward trend present since 2014 was confirmed, the last year in which an increase in the area was recorded.
The Basque Country produces a catalogues of municipal sustainable indicators where it is possible to find an indicator on developable urban land. The values offered for the autonomous community are 12.1% of the area for urban development in 2018, corresponding to a change of -46.3 % compared to 2009.

Source: www.catastro.meh.es
http://opendata.euskadi.eus/catalogo/-/indicadores-municipales-de-sostenibilidad-superficie-residencial-urbanizable/%20

2.2.2 SOIL

Soil loss due to erosion

The indicator shows the annual soil loss due to sheet and rill erosion calculated by the National Soil Erosion Inventory (INES) based on the international RUSLE model, expressed in t/ha referring to the erodible total surface of each autonomous community, calculated by deducting from the geographical surface, the artificial surfaces, surface water sheets and wetlands.

Justification

Erosion is one of the most serious environmental problems present in Spain. Among other effects, the loss of fertility is agricultural and forestry soil, the acceleration of the degradation of the vegetation cover and the reduction of the natural regulation of waters. The loss of soil due to erosion is also one of the principal pressures on soil in Europe, according to the European Commission Thematic Strategy on Soil and one of the principal challenges mentioned in the Sustainable Development Goals.

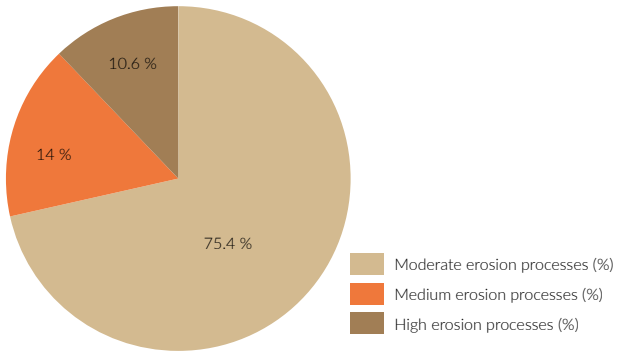
Specifically, erosion is closely linked with SDG 15: (To sustainably manage forests, fight against desertification, to halt and reverse the degradation of the lands and arrest the loss of biodiversity).

According to data from the National Soil Erosion Inventory (INES), not including the Basque Country due to the lack of data, almost 25 % of the erodible surface area of Spain is subject to moderate and high erosion (soil loss of in excess of 10 t/ha·per year).

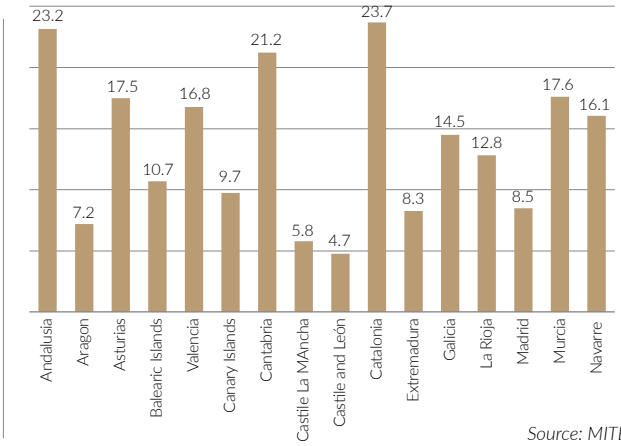
The average soil loss in Spain is 12.2 t/ha, which varies by autonomous community, with Catalonia, Andalusia and Cantabria being those with the highest loss (23.7 t/ha, 23.2 t/ha and 21.2 t/ha) respectively. At the other end of the scale are the autonomous communities of Castile and León (4.7 t/ha), Castile-La Mancha (5.8 t/ha), Aragon (7.2 t/ha), Extremadura (8.3 t/ha), Madrid (8.5 t/ha) and the Canary Islands (9.7 t/ha) with the lowest soil loss rates.

Unlike 2017, this year the data corresponding to Castile-La Mancha is included, which, with the second lowest soil loss (5.8 t/ha), brings the national average down by 0.52 t/ha.

Area affected by erosion processes in Spain



Average annual soil losses (t/ha).



Source: MITECO

The SDG 15.3 contemplates for 2030, fight against desertification, rehabilitation of lands and degraded soils including lands affected by desertification, drought, and a world with neutral soil loss.

Source: Data provided by the Directorate-General for Rural Development and Forestry Policy. Secretariat-General for Agriculture and Food. Ministry of Agriculture and Fisheries, Food and the Environment
http://opendata.euskadi.eus/catalogo/-/indicadores-municipales-de-sostenibilidad-superficie-residencial-urbanizable/

2.2.3 COASTS AND MARINE ENVIRONMENT

According to the United Nations' *The Sustainable Development Goals Report 2018*, studies carried out in open seas and coastal locations around the world revealed that current levels of marine acidity increased by 26 % from the start of the industrial revolution. Marine life is exposed to conditions alien to the natural change experienced previously and the global trends point to continued deterioration of coasts due to pollution and eutrophication, which could affect 20 % of large marine ecosystems by 2050.

The accelerated loss of the richest and most productive ocean habitats, such as coral reefs and mangroves, threatens the wellbeing of hundreds of millions of people. Plastic pollution remains a growing global problem, with this type of waste having been detected in all of the main marine habitats in the world, from coasts and inland waters to deeper ocean area including the Mariana Trench.

2018: International Year of the Reef

The UN Environment Programmed officially launched the International Year of the Coral Reef in Fiji in January 2018.

The ecosystems of the coral reefs provide resources worth an estimated value of around 375 billion dollars per year. These natural habitats are home to 25 % of marine life and feed millions of people, contribute to the discovery of new pharmaceutical products and, moreover, provide work through tourism and the fishing industry. Despite this, recent figures indicate that the international financial support to protect and manage the world's coral reefs is insufficient.

According to studies carried out, annual investment in maintaining healthy reefs through overseas development aid is just 0.07 % of the value of the corporate profits we obtain from these ecosystems. Related projects were identified in 83 of the more than 100 countries and territories with a great area of coral reefs, and 314 projects surveyed, 29 focussed on a single country: Tuvalu.

The United Nations Environment Programme also announced the launch of a detailed analysis of the condition of the coral reefs of the Pacific Ocean. The report, which will be published soon, is based on data from 128 islands, covers 19 countries and research which includes more than 20 000 surveys, shows that Pacific reefs are generally in better condition than many others in the world, but the structure and types of coral in this region is changing. These changes affect the ecosystem services provided by barrier reefs, especially their fishing production.

Over the last three decades, half of the planet's corals have died due to the rise in water temperature and the acidification of the oceans together with other threats such as pollution with nutrients, sediment and plastic and overfishing.

2.2.3 COASTS AND MARINE ENVIRONMENT

The International Maritime Organization (IMO) has committed to tacking the environmental problem posed by plastics on a deeper level. On 26 October, the Committee for the Protection of the Marine Environment adopted a Plan of Action prepared as part of global efforts to prevent marine plastic waste from entering oceans through the activities of ships. It was agreed that the actions proposed, that affect all type of ships, must be completed for 2025, supporting the commitment of the IMO to meet the targets established in Sustainable Development Goal no.14 (Conserve and sustainably use the oceans, seas and marine resources for sustainable development).

To protect marine resources, the expansion of protected marine biodiversity area remains of crucial importance, along the intensification and increase of financing aimed at the ocean sciences.

As of January 2018, 16 % of marine waters with national jurisdiction (up to 200 nautical miles from the coast), which is an extension of some 22 million km², were covered by protected areas, which is more than double the surface area in 2010. Average marine coverage of protected Key Biodiversity Areas also increased: from 30% in 2000 to 44% in 2018.

At European level, the report *Marine Protected Areas in Europe*, published by the European Environment Agency in October 2018, points out that the European Union is on the right track in policy objectives dedicated to the protection of the oceans. One of the main commitments, Target 11 of the Aichi Convention on Biological Diversity, sets out an objective of ensuring that 10 % of coastal and marine areas, especially those with a particular importance for biodiversity and ecosystem services, are conserved through effective, interconnected and ecologically representative systems of the Marine Protected Areas or similar measures by 2020 .

MPA coverage has improved in nine of ten European regional seas since 2012, for a total of 10.8 % of European sea areas designated as MPA at the end of 2016, highlighting the need for greater coverage of marine area in general, especially in the Macaronesian region and the Mediterranean Sea. Despite the progress made, the coastal waters area covered as MPA in regional European seas is six times bigger than the area for non-continental waters and therefore not all facets of biodiversity are represented in this network, mainly extensive, deep sea areas. Approximately 50 % of Marine Protected Areas in Europe measure less than 5 km². Europe must focus its efforts on establishing larger MPAs beyond coastal waters.

The main challenges set out in this report include, among others, improving the understanding of the interconnection between marine systems to improve the design of MPAs in Europe, increasing their connectivity and representativeness, developing better reporting and data flow mechanisms and European level information with regard to protected species.

2018 was a particularly important year for marine conservation in Spain. On 2 November, the Royal Decree approving the Marine Strategies of Spain was passed, with the primary objective of achieving and maintaining good environmental condition of the marine environment by 2020, granting them the regulatory status provided for in *Law 41/2010, of 29 December, on protection of the marine environment*. The work of the first cycle of application of the Marine Strategies Framework Directive was completed, with the primary objective of achieving and maintaining good environmental conditions of the marine environment by 2020.

2.2.3 COASTS AND MARINE ENVIRONMENT

Life Intemares

The LIFE IP INTEMARES project has the primary objective of achieving an efficient and integrated network of marine space of the Natura 2000 network, using research and the active participation of all stakeholders as the basis for decision making. The project is coordinated by the Fundación Biodiversidad of the Ministry for Ecological Transition. The Directorate General for Sustainability of the Coast and Sea, within the same Ministry, Spanish Oceanographic Institute, the Spanish Fishing Confederation, SEO/BirdLife and WWF-Spain participate as partners.

In 2018, the second year of the project, participative processes were put in place for all marine demarcations for the preparation of management plans and governance and training strategies. The first steps were taken towards the preparation of management plans for the 12 spaces of the Natura 2000 Network off the Levante coast, and the 39 Special Protection Areas for wild birds (SPA) declared in the previous project, the LIFE+ INDEMARES project, and the updating of 24 management plans for the Macronesian Special Areas of Conservation and the Marine Protected Area of El Cachucho.

The mechanisms for joint cooperation on the Natura 2000 Network marine spaces have been strengthened with all coastal autonomous communities and cities, along with other administrations and ministries, among them Public Works, Interior, Defence and Foreign Affairs and Cooperation. A training plan has been developed for the Spanish Navy to improve the knowledge required for the management of the Natura 2000 Network in the marine environment.

Moreover, this second year saw progress made on the declaration of protected spaces, making Spain a leader in marine conservation. Thanks to the declaration of the Mediterranean Cetacean Migration Corridor as a Marine Protected Area, the percentage of marine waters under protections surpassed 12 %, which makes it possible to fulfil the international protection commitments of at least 10 % by 2020.

The island of El Hierro hosted the first participative workshop of the nine programmes that will serve to update the management plans of the 24 marine Special Area of Conservation (SAC) of the Canary Islands.

2.2.3 COASTS AND MARINE ENVIRONMENT

Marine litter on beaches

The indicator shows the abundance, composition and origin of marine littler found on Spanish beaches.

It also offers a typology of material, detailing the percentage of the total and the number of litter items found on beaches by marine demarcation.

Justification

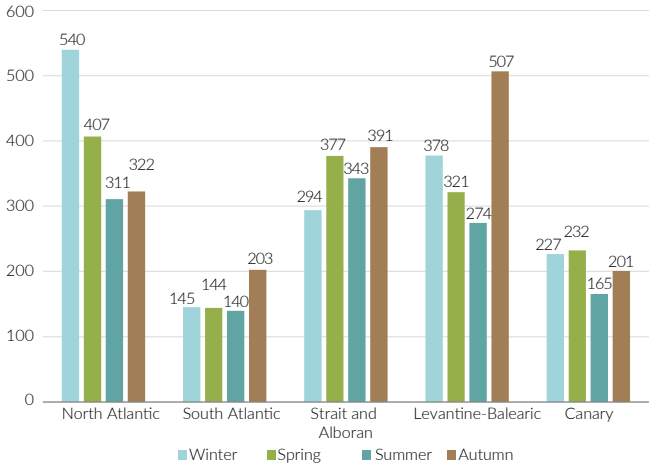
Marine litter is used as a descriptor of the good environmental status (D10) in the Marine Strategies to evaluate the state of the marine environment through a specific monitoring programme that includes, among others, an indicator relating to litter on beaches. The indicator also allows for the monitoring of SDG 14.1 on protecting the oceans.

In 2018, 102 sampling campaigns were conducted on 26 beaches of the *Monitoring Programmes of Marine Litter on Beaches*, with an average of 366 objects recorded per campaign. The highest average abundance was recorded in the demarcation of The Strait and Alboran with 598 objects/campaign and the lowest was recorded in the South Atlantic demarcation with 128 objects/campaign. The North Atlantic, Levantine-Balearic and Canary demarcations recorded levels of between 201 and 443 objects/campaign. During the period 2013 to 2018 in the 5 Spanish marine demarcations, a total of 604 sampling campaigns of marine litter on beaches were carried out, with an average abundance of 384 objects per campaign. The time series of total abundance of marine litter showed a growing trend.

Most litter of known origin relate to tourism activities (26 %), marine transportation or navigation (14 %) or are from sanitation networks (7 %), with the impact of litter from fishing activities (3 %) or agriculture (the latter only identified in specific places) much lower. Litter of unknown origin or from more than one source accounted for the majority (50 %).

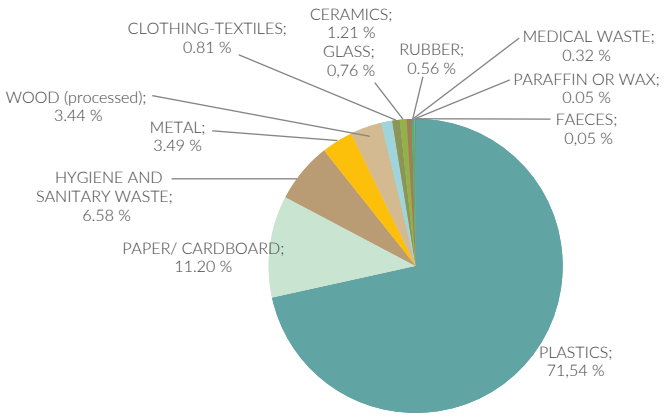
The list of types of litter objects collected on Spansih beaches in the period 2013-2018 and the corresponding percentages can be found in the appendix of the methodological notes of this document.

Average No. of objects found per campaign 2013-2018



Source: MITECO

Percentage of types of objects in Spain overall 2013-2018 (%)



Source: MITECO

Trend Analysis

	TREND 2013-2018*	OBJECTIVE	OBJECTIVES OUTLOOK
Total abundance of marine litter	○	Objective Marine Strategies of Spain Achieve and maintain "Good Environmental Condition for 2020"	○
Abundance of plastic	○		○

The first analysis of trends was calculated in 2018 with the minimum time series 2013-2018, considering that a shorter time series does not offer significant results.

Source: The information on the marine litter on beaches monitoring programme, including the annual report of results, is public and can be consulted on the website of the Ministry for Ecological Transition at the following link:
https://www.miteco.gob.es/es/costas/temas/proteccion-medio-marino/basuras-marinas/basura-programas.aspx

2.2.3 COASTS AND MARINE ENVIRONMENT

Spanish Network of Marine Protected Areas (RAMPE)

Number of Marine Protected Areas in the Spanish Network of Marine Protected Areas (RAMPE)

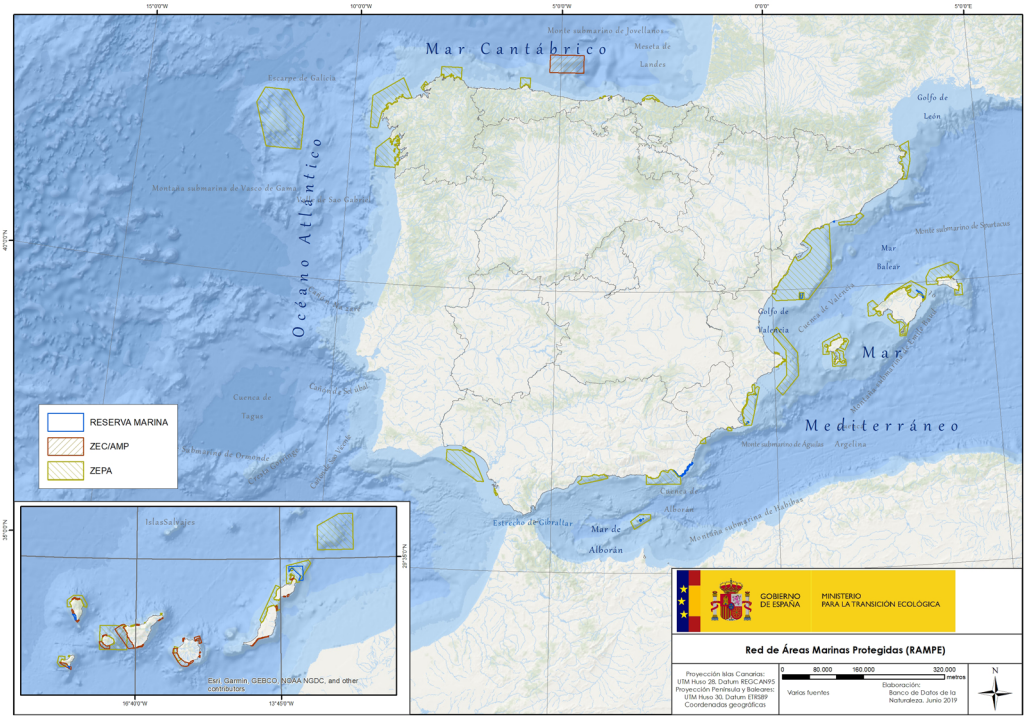
Justification

The RAMPE is our country's contribution to the Global Network of Marine Protected Areas in the framework of the United Nations and the Convention on Biological Diversity, and serves to comply in part with the obligations and commitments acquired by Spain as a contracting party in numerous agreements, conventions and protocols within the international framework and as a Member State of the European Union.

The indicator allows for the monitoring of the SDG 14.5. "by 2020, conserve at least 10 per cent of coastal and marine areas"

81 spaces currently make up the RAMPE: 10 marine reserves of fishing interest, 24 Special Protection Areas for wild birds (SPAs), one Marine Protected Area - which is also an SPA - AND 46 Special Protection Areas for wild birds under state control. The coordination of the RAMPE for the correct delivery of objectives shall be established by the Rampe´s Master Plan. Its main objective will be to identify the actions to be carried out throughout the RAMPE to ensure compliance with international requirements at European Union level.

The Ministry for Ecological Transition plans to commission the Spanish Oceanographic Institute to carry out scientific assessment in the implementation of marine strategies and monitoring of protected marine areas under state control during the period 2018-2021. It will allocate a total of 25.4 million euros over four years for this purpose. Among the primary objective of the commission is the monitoring of Spain's network of Marine Protected Areas and assessment for the declaration, management and protection of marine protected natural areas under state control.



Trend Analysis

DESIGNATION OF TREND TO ASSESS	TREND 2010-2017	PAST YEAR TREND	OBJECTIVES PLANS/PROGRAMMES	OUTLOOK OBJECTIVES
Number of spaces included in the RAMPE	○	○		
RAMPE Master Plan and minimum common criteria for coordinated and coherent management.	○	○	Approval by Roya Decree	2020

Source: https://www.miteco.gob.es/es/costas/temas/proteccion-medio-marino/biodiversidad-marina/espacios-marinos-protegidos/red-areas-marinas-protegidas-espana/red-rampe-index.aspx
https://www.miteco.gob.es/es/prensa/ultimas-noticias/el-gobierno-autoriza-m%C3%A1s-de-25-millones-de-euros-para-la-evaluaci%C3%B3n-y-protecci%C3%B3n-del-medio-marino/tcm:30-480069

2.2.3 COASTS AND MARINE ENVIRONMENT

Quality of coastal bathing water

The indicator shows a percentage of the total of the sampling points in coastal bathing waters according to four categories of quality established by the legislation ("Insufficient"; "Sufficient"; "Good" and "Excellent").

Justification

Bathing water quality is a useful indicator for assessing different aspects relating to both the environmental and health or economic activities such as tourism.

This indicator is the national version of the indicator of the EU's 7th Environmental Programme (Bathing Water Quality), which measures the increase in water classified as "Good" or "Excellent" under the Bathing Water Directive.

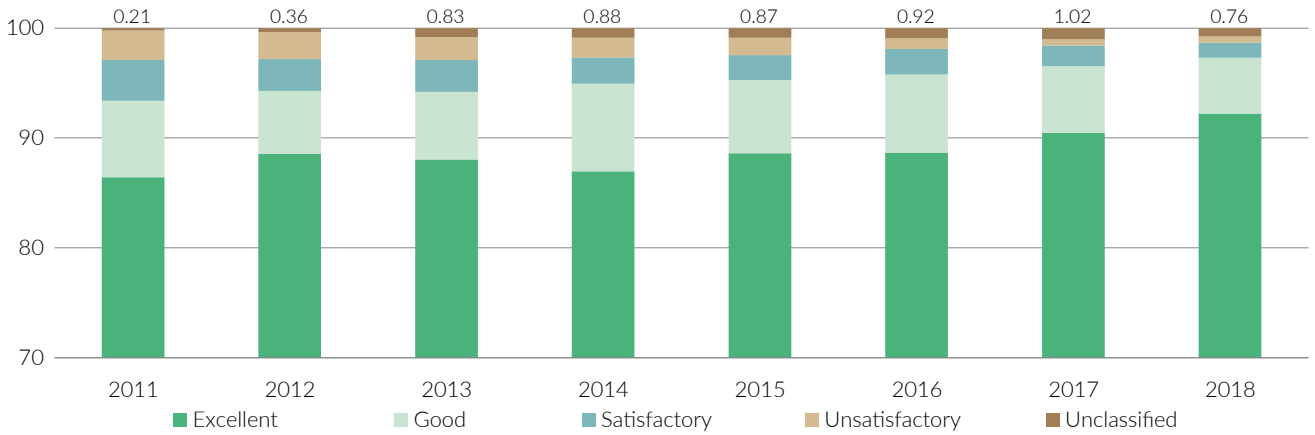
The indicator also allows for monitoring of different sections of SDG 14 (Conserve and sustainably use the oceans).

The year 2018 was the 11th seas of application of *Royal Decree 1341/2007, of 11 October, on the management of bathing water quality* and, in general terms the quality of coastal bathing waters has improved over this period. The sampling points that recorded "Excellent" quality have maintained a positive trend since 2014, having registered an increase of 1.75% compared to 2017.

At the same time, the number of coastal bathing waters classified as "Sufficient" and "Insufficient" has continued to fall, with a fall of 0.5% in 2018 compared to the previous year. The census of coastal bathing waters for the season 2018 was comprised of a total of 1 965 sampling points, which were classified as follows: Excellent: 1 812 (92.2 %), Good: 100 (5.1 %), Sufficient: 27 (1.4 %), Insufficient: 11 (0.6 %), Not classified: 15 (0.8 %).

The autonomous communities with the most sampling points are Galicia, Andalusia, Catalonia, Valencia and the Canary Islands, totalling 1 502 points. The 2018 bathing season lasted 111 days on average, with a maximum of 303 days in the Canary Islands and a minimum of 49 days in Navarre. The second fortnight and the entire month of August were common in all bathing areas.

Percentage change in classification of coastal bathing water areas



Source: Calidad de las Aguas de Baño en España 2018, MSCBS

Trend Analysis

5-YEAR TREND	PAST YEAR TREND	OBJECTIVE	OBJECTIVE OUTLOOK
○	○	Increase the number of waters classified as "Excellent" or "Good" in accordance with the *Bathing Water Quality Directive* for 2020.	○

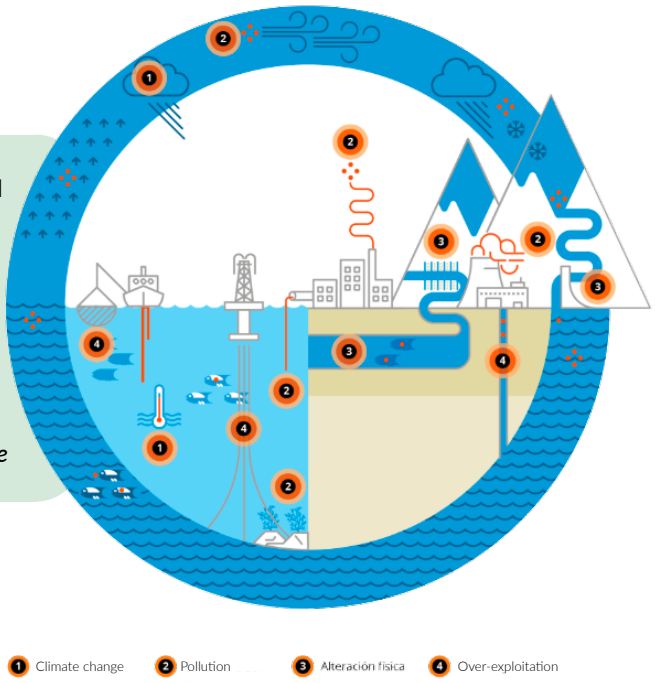
Source: Informe Técnico Calidad de las Aguas de Baño en España 2018.
https://www.mscbs.gob.es/profesionales/saludPublica/saludAmbLaboral/calidadAguas/aguasBanno/docs/INFORME_AB_2018.pdf

2.2.4 WATER

Water is a basic natural resource that is essential to maintaining life for all beings on the planet. Today it is threatened by climate change and demographic pressure, which bring with them increased demand for resources which then leads to increased demand for water. The article produced by the European Environment Agency (EEA), *Climate Change and Water: warmer oceans, flooding and droughts*, is part of the EEA's Signals series - *Living in a Changing Climate*. It summarises clearly the main pressures faced by water bodies; flooding, droughts, acidification of the oceans, rising sea levels, alteration of marine currents due to the increase in water temperature and the resulting changes in the distribution of marine species, etc. These effects are expected to intensify over the coming years.

Water cycle: main problems affecting the quality and quantity of water. Water is present in all aspects of our life. Unfortunately, the way we use and treat this valuable resource not only impacts on our health but on all beings who depend on water. Pollution, over-exploitation, physical alteration of aquifer habitats and climate change continue to undermine the quality and availability of water.

Source: *EEA Signals 2018 Water is Life*



In relation to climate change, the Ministry for Ecological Transition (MITECO) launched the Adaptation to Climate Change Plan (PIMA Adapta) in March 2015. The development of PIMA Adapta in the area of water management and the associated public water domain is known as PIMA Adapta-AGUA. The projects and actions of this plan are developed across four strategic lines, which contain all the categories of adaptation options proposed by the Intergovernmental Panel on Climate Change in its *Fifth Assessment report*: measures for the management and adaptation of natural fluvial reserves; adaptation to extreme phenomena; assessment of the impact of climate change on hydraulic resources and the development of strategies for the adaptation and development of projects for the adaptation to climate change in the public domain.

Through the PIMA Adapta-AGUA Plan 2018, a series of actions were taken which are worth highlighting: Project for the environmental recovery of the river Segura and the section between Sotos de los Álamos and la Hijuela. "Termino Municipal" Municipality de Molina de Segura y Alguazas (Murcia), Project to improve river connectivity and the protection of vulnerable habitats in the southern area of the Douro basin, Execution of Project to reduce risk of flooding and improve the ecological state of the rivers Júcar and Moscas as they pass through Cuenca and Technical Service for the monitoring of reference stations and capture of baseline data for the assessment of changes due to climate change and atmospheric pollution. Current situation.

World Water Day is held every 22 March with the aim of raising awareness among citizens of the importance of freshwater and the priority that is the sustainable management of such a limited resource. The theme for 2018 was '*Nature for Water*' and 2019's is *'Leaving No One Behind'*. The 2019 theme incorporates one of the principal elements of the 2030 Agenda for Sustainable Development, whose goal number 6 focuses precisely on "*guaranteeing the availability and sustainable management of water and sanitation for all*".

2.2.4 WATER

The theme of World Water Day 2019 is *'Leaving No One Behind'*. One of the targets of Sustainable Development Goal 6 is to guarantee the availability and sustainable management of water and sanitation for all between now and 2030. That is what 'Leaving No One Behind' means.

To mark World Water Day 2019, the MITECO organised an open day on Nature-based Solutions (NBSs) to water management.

NBSs are actions to protect, sustainably manage and restore natural or modified ecosystems that tackle social challenges in an effective way with the aim of fostering human wellbeing and the benefits of biodiversity. These solutions can help, in a sustainable and economically profitable manner, to balance the water cycle, mitigate the effects of climate change and improve health and livelihoods, using natural processes to improve the availability of water, improve water quality and reduce the risks associated with related disasters. NBSs have the potential to tackle the challenges presented by water management in all sectors, especially agriculture, sustainable cities, reduction of the risk of disaster and water quality.

The Waters Act created the National Water Council as the national body for consultation and participation in matters relating to water. On it are represented the General State Administration, the autonomous communities, local authorities through the state association with the most extensive implementation, the river basin authorities, the most representative professional and economic organisations in Spain involved in different uses of water, the major national trade union and employer organisations and state non-profit organisations whose objectives are based on protecting environmental interests.

Two of the main themes related to the management of water in Spain that were dealt with at the National Water Council, held in October 2018, were wastewater treatment and hydrological drought.

On wastewater treatment, it is necessary to highlight the start, in October 2019, of a public consultation process on the National Treatment, Sanitation, Efficiency, Saving and Reuse Plan (DSEAR Plan). This Plan is the framework within which to set the "*general criteria (economic, social and environmental) that allow for the prioritisation and study of the viability of treatment and sanitation measures and actions contained in the hydrological plans*". October also saw the opening of the public information process on the first phase of the third-cycle hydrological plans.

The importance of wastewater treatment to guaranteeing the health of the population and of ecosystems cannot be overstated. Treatment has improved in recent years in Europe, reaching levels of over 80 % in northern countries in 2015, 97 % in central Europe and 70 % in the south east and eastern Europe. The 2016 data were sent to the European Commission in 2017 in biannual reports on the degree of compliance of wastewater treatment in urban areas of more than 2 000 equivalent inhabitants. These show that 77.5 % of the population comply with the provisions established in Directive 91/271/EEC in relation to tertiary or more rigorous treatment; almost 87 % of the population was in compliance with the provisions for secondary or biological treatment, and over 97 % of the population was connected to urban wastewater collection systems or suitable individual systems. Nevertheless, even though an improvement of the situation compared to previous years has been detected, it is necessary to deliver on the commitments assumed by the country.

2.2.4 WATER

The second of the issues is that related to the change in precipitation and the lack of rainfall recorded in late 2018, which continued into the spring of 2019 and led to Spain finding itself in a hydrological drought situation. In addition to the scarcity of hydrological resources, both for supply and use as a source of renewable energy, this situation lead to an increased risk of fire, which is another major problem in the country. In addition to being a worrying situation in and of itself, it is also a concern due to its impact on the current climate change scenario and the mitigation of greenhouse gas emissions. In the case of Spain, hydropower is one of main sources of renewable energy, which is dependent on the annual variations in precipitation and storage in hydroelectric dams. In this regard, the National Water Council issued a favourable report on the approval of the special drought plans for river basin districts under State control.

In December 2018, *Order TEC/1399/2018, of 28 November, approving the review of the Special Drought Plans was published in the BOE. Corresponding to the river basin districts of the Western Cantabria, Guadalquivir, Ceuta, Melilla, Segura y Júcar; the Spanish side of the Miño-Sil river basin district, Douro, Tagus, Guadiana and Ebro; and the ambit of Spanish state competency for the Bay of Biscay (East) river basin district*.

These new drought management plans replace those that were in place until now, which were approved in 2007 via Order MAM/698/2007.

The AEMET's *Annual Climatological Summary 2018* describes the year 2018 as warm in Spain (average temperature of 15.5° C) and considers it the twelfth warmest year since 1965 and the ninth warmest of the 21st century so far. In terms of precipitation, the year 2017 was a very dry year in Spain overall while the year 2018 was very wet, with average precipitation in excess of 800 mm (25 % above the average annual value according to the reference period 1981-2010), conditioned by spring precipitation. However, the end of the year and primarily the spring of 2019, the scarcity of precipitation once again led to a hydrological drought situation throughout much of Spain. In June 2019, according to MITECO, Spanish reservoirs were at 58.5 % of capacity (*Informe Hidrológico de Tendencia* on 18 June 2019), when on the same day the previous year they were at 73 % of capacity and the 10-year average level is 72.5 %.

In relation to the situation of other variables of interest on the state of our waters, we find that in 2018 there was a slight worsening of the quality of inland bathing waters, as even though the percentage of sampling points classified as sufficient to excellent remained the same as in 2017, at 79 %, there was an increase in the insufficient quality. This is due to several sampling points that were unclassified in 2017 being classified as insufficient this time around.

2.2.4 WATER

However, in 2017 and with regard to the previous year, it can be seen that nine of the 16 hydrographic demarcations (without including Melilla) saw reductions in the number of sampling points with average nitrate values of above 50 mg/l. This is a sign of improvement in the quality of groundwater. On the other hand, in relation to surface waters, in 2017 there was a 3.13 % increase in the percentage of sampling points with BOD5 (> 10 mg/l), which means a decrease in the general quality of these waters and a break with the trend of previous years, which shows an increase over time in the percentage of sampling points showing lower concentration and a reduction in those showing higher concentrations.

It must also be highlighted that since 2004 water distributed for public supply has shown a downward trend, at 21 % in 2016. Between 2014 and 2016, the reduction was just 0.5 %, above all conditioned by water consumption in homes which increased 2.07 % compared to decreases in the economic and municipal sectors. This increase in consumption in homes led to an increase of 3 % in water consumption per capita between 2014 and 2016, at 136 l per capita in 2016.

2.2.4 WATER

Reservoir Water Levels

The indicator shows the water reserves in mainland reservoirs at the end of the hydrological year 2017-2018 Offers global information for watersheds (Mediterranean and Atlantic).

Justification

Water is a scarce resource and it must be protected and conserved as it is important to be able to ensure integrated and coordinated management with the aim of achieving hydrological sustainability.

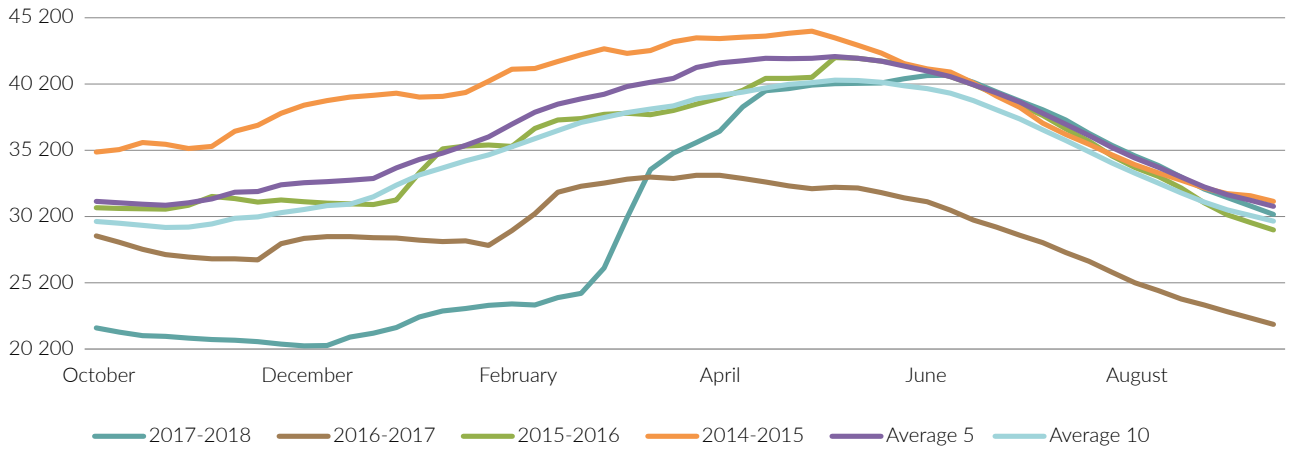
This indicator allows for the monitoring of the 7th EAP (primary objective 2) and SDGs (goal 6).

Taking into account mainland Spain alone, at the end of September 2018, the total water level in reservoirs was 56 074 hm³, with 75 % (42 104 hm³) belonging to the Atlantic Watershed and the remaining 25 % (13 970 hm³) to the Mediterranean Watershed. Among the river basins with the highest capacity are the Tagus, with 11 012 hm³, the Guadiana, with 9 261 hm³ and the Guadalquivir, con 8 118 hm³. On the other hand, the basins with the lowest reservoir capacities are the inland basins of the Basque Country (21 hm³) and the Bay of Biscay (East) (73 hm³).

At the end of the 2017-2018 hydrological year, total mainland water reserves represented 54.1 % of reservoir capacity, a percentage very similar to the average over the last 10 years and the last 5 years, which were 53.9 % and 55.6 % respectively. At the end of the hydrological year 2017-2018 there were 31 006 hm³ of water reserves, 75.3 % of which were Atlantic Watershed reserves and 24.7 % Mediterranean Watershed reserves.

The year 2018 began with reservoir levels below those recorded at the start of the year 2017 and below the 5-year average and the 10-year average. However, due to a period of extraordinary precipitation above the average registered between late February and late June, levels recovered, by the end of September 2018, to average levels for such dates.

Peninsular hydrological reserves:
Volume of water reserves (hm³) by hydrological year



Source: MITECO

On the other hand, closely linked with reservoir water levels, the National Drought Observatory of MITECO offers information on hydrological drought, complementing the information on meteorological drought provided in the indicator Drought Periods included in chapter 2.1.2. on Energy and Climate in this publication.

Source: Ministry for Ecological Transition, 2019. Hydrological Bulletin of 25 September 2018. Consult at: Agua/Evaluación de los recursos hídricos/Análisis de la reserva/Boletín hidrológico/ Acceso al Boletín Hidrológico Semanal/ Estado de la reserva hidráulica y energía disponible: totales peninsulares/ Reserva hidráulica peninsular http://eportal.mapama.gob.es/BoleHWeb/

2.2.4 WATER

Water consumption

The indicator shows the annual volume of registered water distributed by user groups, economic sectors (industry, services and livestock farming) and municipal consumption (irrigation of gardens, street cleaning and other uses).

It also offers information on the average annual consumption per capita per day, calculated using the ratio of total water registered and distributed to homes and the population.

Justification

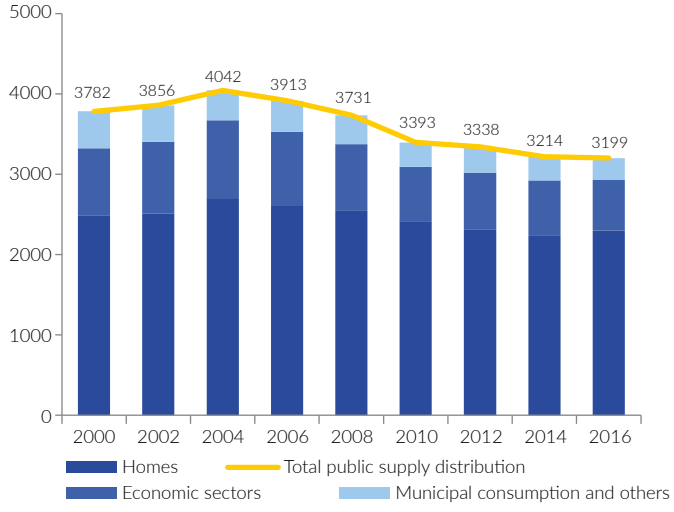
Water supply is considered a basic service for the development of society at all levels: demographically, socially and economically. Furthermore, its distribution is enforced as compulsory by the Public Administration.

The indicator allows for the monitoring of the 7th EAP (primary objective 2) and SDGs (goal 6).

In the year 2016, the public urban supply network supplied a volume of 3 199 hm³ of water, which constituted a slight reduction on 2014 (0,47 %). Of this volume, 72 % was water registered on users' meters. Water not registered constitutes 25 % of the total volume distributed and is differentiated between real losses (60 %) and apparent losses, principally generated by measurement errors, fraud and unauthorised consumption (40 %).

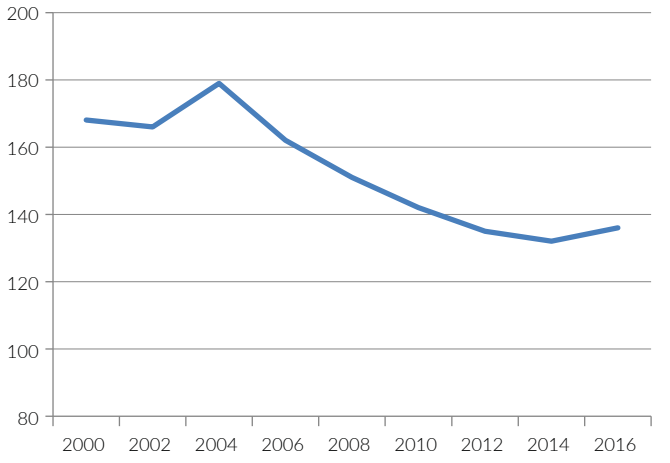
The autonomous communities that recorded the highest increases in the volume of water registered and distributed in the year 2016 compared to 2014 were the Balearic Islands (10.1 %), the Canary Islands (9 %) and Extremadura (7.8 %). On the other hand, the autonomous communities with the best reductions were Castile and León (15.8 %), the Basque Country (6.9 %) and Cantabria (5.4 %). In terms of the type of user, it must be pointed out that household consumption increased 2.6 % on 2014 while the economic sectors reduced consumption 7.6 % and municipal consumption fell by 7.2 %.

Distribution of registered water distributed for supply for groups of users (hm³)



Source: INE

Average water consumption per inhabitant per day



Source: INE

In homes, water consumption in litres per capita per day was 136 in 2016, an increase of 2.9 % on 2014 (4 litres more per capita per day).

Looking at autonomous communities, the highest average water consumption was recorded in Valencia (163 litres per capita per day), Cantabria (155) and Castile and León (152). On the contrary, the lowest levels were recorded in the Basque Country and Navarre (112 litres) and La Rioja (115).

Source: National Institute of Statistics, 2019. Water supply and sanitation statistics 2000-2016. Consult at: INEbase/Agricultura y Medio Ambiente/Agua/Estadística sobre el suministro y saneamiento del agua/Resultados por comunidades autónomas. Serie 2000-2016/Suministro y saneamiento del agua/1.4 Distribución de agua registrada por comunidades y ciudades autónomas, grupos de usuarios e importe y periodo. http://www.ine.es/jaxi/Tabla.htm?path=/t26/p067/p01/serie/l0/&file=01004.px&L=0

2.2.4 WATER

Organic pollution of rivers

This indicator also reveals the percentage of control stations with an average value of BOD5 between the following intervals: 0 to 3 mgO_2/l, 3 to 10 mgO_2/l and greater than 10 mgO_2/l. This indicator also shows the percentage of control stations where the average value fell between the intervals: below 40 µg/l N, 40 to 60 µg/l N, 60 to 390 µg/l N, 390 to 780 µg/l N and above 780 µg/l N.

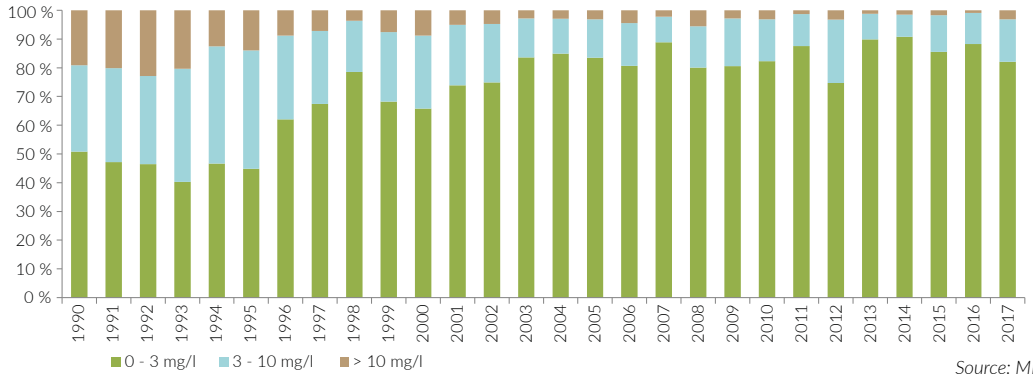
Justification

This indicator allows us to estimate the volume of oxidable materials present in water, regardless of their origin, whether organic or mineral, therefore affecting the quality of our waters. Organic pollutants consume the oxygen dissolved in the water and affect aquatic life.

The indicator allows for the monitoring of the SDGs (goal 6).

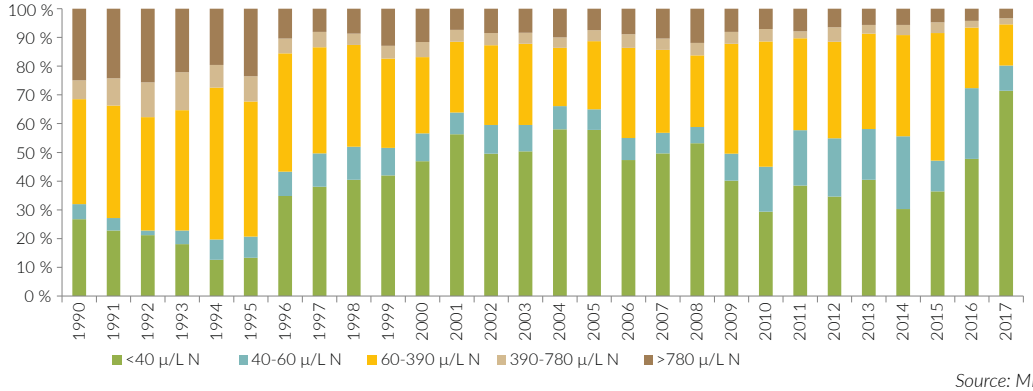
Although it varies year to year, the trend in Biochemical Oxygen Demand (BOD5) shows an increase over time in the percentage of sampling points with lower concentration of dissolved oxygen and a reduction in those with higher concentration. As can be seen in the graphic, this improvement is more evident since the year 2003 and, for example, from 2013 the percentage of stations with average values of BOD5 above 10 mgO_2/l, is less than 2 % and in the case of the year 2016 to fall below 1 %. However, 2017 saw an increase in 3.13 %, in the percentage of stations with higher concentrations of BOD5 > 10 mg/l) which constitutes a general dip in the quality of these waters and a break with the trend of the previous years.

Percentage of sampling stations according to their average value of BOD5 (mg/l)



Source: MITECO

Percentage of sampling stations according to their average value of ammonium (µg/l N)



Source: MITECO

The trend in mean concentration levels of ammonium is more irregular. The graph shows an initial period (1990-1995) in which the percentage of sampling points recording low concentrations was similarly low. This is followed by an intermediate period (1996–2009) in which the percentage of sampling points showing low concentrations increased. Finally, in the third period (2010–2016) the percentage of stations recording better concentrations fell again, although not to the initial levels. Over these last 3 years, moreover, the sampling points with high concentrations of ammonium have remained below 5 % and this downward trend continued further in 2017, with levels falling below 4 %.

Source: Data provided by the Sub-directorate General for Sustainable Water Use and Planning. Directorate General for Water. Ministry for Ecological Transition

2.2.4 WATER

Nitrate pollution of groundwater

The table shows the percentage of sampling points with nitrate concentrations above 50 mg/l estimated in each of the river basin authorities for years 2012 to 2016, both inclusive.

Justification

Nitrate pollution of waters is a result of excessive fertilisation or poor treatment of wastewater, both industrial and domestic. This deterioration of waters has the consequence of affecting our health in the very short term

The indicator allows for the monitoring of the SDGs (goal 6).

Of the 16 river basin districts with data in 2017 (no data has been made available for Melilla since 2016), seven show less than 15 % of their stations with nitrate concentrations below 50 mg/l. Four of these recorded more than 50 mg/l of nitrates at between 15 % and 30 % of their stations while five districts had more than 30 % of their stations with nitrate concentration values in excess of this 50 mg/l threshold.
Compared to the previous year, nine river basin districts saw reductions in the number of stations with average nitrate values in excess of 50 mg/l, with the Douro district in particular standing out with a reduction of almost 11 percentage points. On the contrary, seven districts recorded increases in the number of these stations with the Segura district showing an increase of almost 16 percentage points.

Percentage of stations with nitrate concentration over 50 mg/l

RIVER BASIN DISTRICTS	2012	2013	2014	2015	2016	2017
Miño-Sil	0 %	0 %	0 %	0 %	3.08 %	1.60 %
Galicia-Coast	3.10 %	0 %	1.50 %	0 %	0 %	0 %
Bay of Biscay (East)	0 %	0 %	0 %	0 %	0 %	0 %
Bay of Biscay (West)	0 %	0 %	0 %	0 %	0 %	0 %
Douro	16.20 %	15.80 %	13.20 %	14.60 %	20.42 %	9.50 %
Tajo	16.90 %	33.30 %	10.60 %	11.40 %	12.30 %	9.30 %
Guadiana	31.60 %	38.10 %	30.80 %	27 %	31.01 %	30.77 %
Guadalquivir			26.70 %	25.90 %	26.60 %	24.14 %
Mediterranean Basins of Andalusia	8.70 %	13.30 %	12.80 %	12.60 %	12.20 %	12.89 %
Guadalete and Barbate	26.60 %	31.10 %	29.80 %	26.50 %	25.30 %	17.91 %
Tinto, Odiel and Piedras	19.10 %	34.20 %	38.90 %	40 %	37.40%	35.14 %
Segura	21.70%	23.20 %	18.80 %	23.20 %	30 %	45.95 %
Júcar	23 %	44.20 %	35.70 %	36.10 %	44.32 %	46.10 %
Ebro	19.40 %	21.80 %	23.20 %	27.00 %	19.77 %	24.37 %
Inland Basins of Catalonia	43.60 %	33.60 %	38.70 %	33.50 %	31.52 %	29.78 %
Balearic Islands	29.40 %	30.10 %	28.10 %	29.60 %	36.30 %	34.99 %
Melilla			100 %	66.70 %		

Source: MITECO

Source: Data provided by the Sub-directorate General for Sustainable Water Use and Planning. Directorate General for Water. Ministry for Ecological Transition

2.2.4 WATER

Quality of inland bathing water.

The indicator shows a percentage of the total of the sampling points in inland bathing waters according to four categories of quality established by the legislation ("Insufficient"; "Sufficient"; "Good" and "Excellent").

Justification

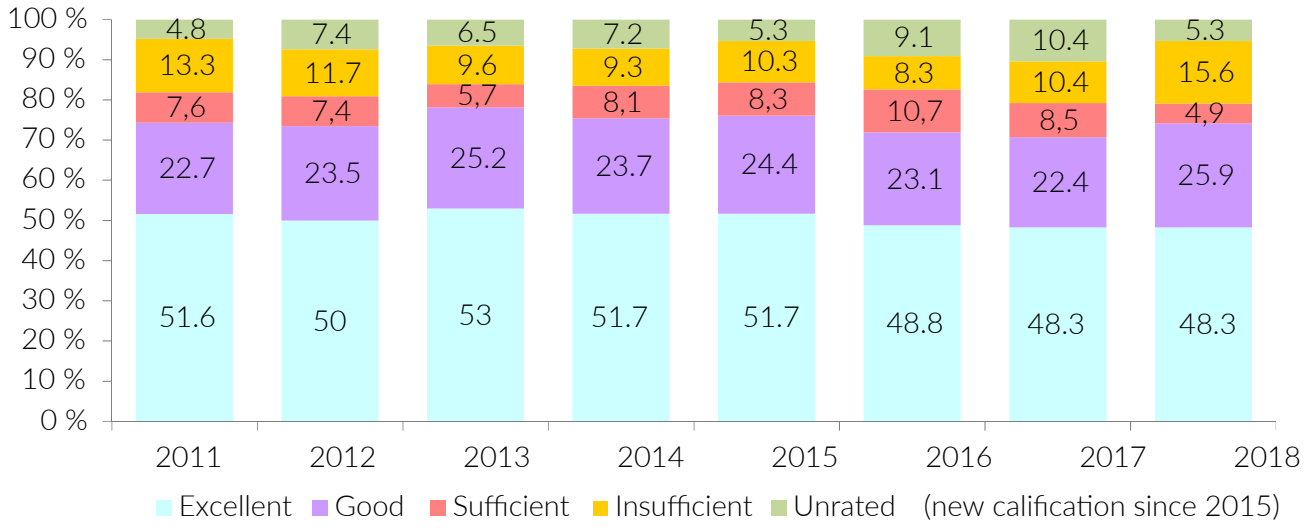
Inland bathing waters are defined as any inland surface water body where it is expected that people may bathe or where there is nearby activity related directly to bathing and where there is no permanent prohibition of bathing nor has a permanent recommendation to refrain from doing so been put in place or where there is no objective danger to the public.

The indicator allows for the monitoring of the 7th EAP (primary objective 2) and SDGs (goal 6).

In 2018, the number of inland bathing waters increased and has grown from 175 areas in 2008 to 251 areas in 2018. The autonomous communities with the highest number of bathing areas were: Galicia (69 areas), Castile La Mancha (40 areas) and Castile and León (35 areas). The autonomous communities with no inland bathing waters are Asturias, the Canary Islands, Cantabria, the Balearic Islands, the Basque Country and Ceuta and Melilla.

Of the 263 sampling points at inland bathing waters, 69 were in Galicia, 40 in Castile-La Mancha, 35 in Castile and León and 30 in Extremadura. 48.3 % of the sampling points recorded excellent quality (127 points), 25.9 % recorded good quality (68 points), 4.9 % recorded sufficient quality (13 points) and 15.6 % recorded insufficient quality (41 points). The autonomous community with the highest number of excellent and good waters was Galicia (with 35 excellent for bathing and 24 with good quality). In general, if we compare to 2017, the quality of inland bathing water worsened in 2018 due to the increase in the percentage sampling points recording insufficient quality that had previously appeared in 2017 as "unclassified".

Quality of inland bathing water. Percentage of sampling points by categories



Source: Ministry of Health, Consumer Affairs and Social Wellbeing

The average duration of the bathing season for inland waters was 86 days. Madrid was the autonomous community with the longest bathing season, with 124 days, while Navarre had the shortest at just 49 days. Most of the autonomous communities had a single season, except the autonomous communities of Andalusia, Galicia and Navarre, which had two seasons in the year.

In 2018 and in relation to the incidents that arose, it must be highlighted that there were 17 instances of short-term pollution, with an average duration of 2 days. There were also 17 incidents due to exceptional circumstances, with average duration of 8 days, and 3 incidents due to anomalous situations, lasting an average of 52 days.

Source: Ministry of Health, Consumer Affairs and Social Wellbeing "Calidad de las aguas de baño en España, 2018".
https://www.mscbs.gob.es/profesionales/saludPublica/saludAmbLaboral/calidadAguas/aguasBanno/publicaciones.htm

2.3 SECTORS OF THE ECONOMY

2.3.1 Agriculture

- Fertiliser consumption
- Consumption of phytosanitary products
- Irrigated area
- Organic farming
- Organic livestock farming
- Number and area of holdings under “green payment”

2.3.2 Fishing

- Number of vessels and fishing fleet capacity
- Fishing fleet catches
- Aquaculture production

2.3.3 Industry

- Final energy consumption of the industrial sector
- GHG Emissions in the industrial sector
- Expenditure on environmental protection in the industrial sector
- Road and rail accidents causing possible environmental damage
- Industrial accidents involving hazardous substances
- Industrial facilities with data validated in Spain's PRTR

2.3.4 Transport

- Demand for inter-city passenger and freight transport
- Emissions of air pollutants from transport
- Passenger vehicle fleet by fuel type
- Final energy consumption of transport
- Environmental efficiency of transport in terms of GVA, demand, emissions to the atmosphere and final energy consumption

2.3.5 Urban environment

- Urban density by autonomous community/city
- Urban public transport
- Final energy consumption per household

2.3.6 Tourism

- International tourists per inhabitant
- International tourists per km of coastline
- Tourist population equivalent in areas with the highest number of overnight stays in hotels
- Number of visitors to National Parks
- Rural tourism: accommodation, capacity, tourists and overnight stays
- Proportion of jobs in sustainable tourism with respect to total tourism jobs

2.3.1 AGRICULTURE

The United Nations Food and Agriculture Organization (FAO) published in 2018 *The Future of Food and Agriculture: Alternative Pathways to 2050*. This report makes a prospective analysis of the possible strategic options for achieving the Sustainable Development Goals (SDGs) related to food and agriculture. Among the main key messages, it points out that "*the principal concern with respect to the future of food and agriculture is whether these systems are capable of feeding the global population sustainably and effectively up to 2050 and beyond and, at the same time, cover the additional demand for agricultural products for non-food use.*".

The 2030 Agenda, the Paris Agreement and different national strategies to implement said international agreements set out the pathway to a more sustainable, more efficient economic model with the capacity to improve its resilience in the face of climate change. We must remember that the agricultural sector is the fourth largest emitter of greenhouse gases, behind the transport sector, electricity production and industry. In the year 2017, emissions from this sector in Spain accounted for 12 % of total emissions. This sector has the unique claim of being the only one capable of producing emissions due to the use of fossil fuels, soil management, the use of fertilisers, burning agricultural waste, livestock among others and at the same time be capable of acting as a carbon sink. In this regard, certain international initiatives in relation to climate change and agriculture in which Spain participates stand out, such as the Global Research Alliance on Agricultural Greenhouse Gases (GRA), the Global Alliance for Climate Smart Agriculture (GACSA) and the 4 per 1000 initiative.

Emissions from agriculture in 2017, in terms of CO_2 equivalent (CO_2-eq), represented 11.6 % of total emissions in the National Inventory. In 2017, emissions increased 3.1 % in respect to 2016 in 8.9 % with respect to 1990, reaching 39 525 kt of CO_2-eq.

The agricultural sector in Spain constitutes a key pillar for the maintenance of the economy and sustainability of the rural world. In the year 2018, the agricultural surface area in use of Spain (SAU) was more than 23 million hectares, almost half of Spanish territory, of which 17 million hectares was crops. Of the total surface area covered, 76 % is dedicated to the growth of dry crops and 24 % to irrigated crops. Agricultural revenue, in current terms, saw an increase of 4.3 % in 2018, compared to the previous year, to sit at 30 217 million euros.

The aforementioned sustainability of the rural world is strongly conditioned by the depopulation of the most rural regions, a matter of vital importance for the country's sociodemographic balance. In this regard, on 4 October 2018, the Ministry of Agriculture, Fisheries and Food (MAPA) launched the National Forum on Depopulation to debate civil society solutions. Since January 2017 and throughout the year 2018, work has been performed on the National Strategy against the Demographic Challenge, where territorial depopulation is one of the key areas of action and the agricultural sector is a related, employment-generating activity.

Agenda 2030 and the National Strategy to Tackle the Demographic Challenge are two perspectives of the same national project. To fulfil the Sustainable Development Goals (SDGs) it is essential to guarantee territorial cohesion, and tackling the demographic challenge must be framed within the SDGs.

2.3.1 AGRICULTURE

As a relevant landmark in relation to strategic planning at community level, on 1 July 2018, the European Commission presented a series of legislative proposals on the Common Agriculture Policy (CAP) from 2020. With these proposals, the objective is for the CAP to better respond to present and future challenges, such as climate change and generational changes, without forgetting the need for a more sustainable and competitive agricultural sector. From this moment, the Ministry of Agriculture, Food and Environment has worked in a coordinated manner with autonomous communities and organisations in the sector on a dialogue and participation process to draft the document *Spain's Position on the Reform of the Common Agricultural Policy post 2020*.

The nine objectives of the future CAP:

1. **Guarantee fair income for agricultural producers**
2. **Increase competitiveness**
3. **Re-balance power in the food chain**
4. **Take action against climate change**
5. **Protect the environment**
6. **Preserve landscapes and biodiversity**
7. **Support generational relief**
8. **Maintain dynamic rural areas**
9. **Protect food and health quality**

Graphic: Objectives of the CAP European Commission

In the context of this new planning period, the European Commission is also drafting an impact assessment of the CAP on climate change. An exhaustive analysis is performed on the measures implemented under the CAP to date, and their importance and coherence with the European climate action policy. The study concludes the key role of the CAP to link international and national policies and actions with the day-to-day work of the sector.

The importance of the CAP for the agricultural sector and the rural environment is key in our country. In 2017, a total of 775 000 recipients received 6 678 million euros in this way. In line with the environmental sustainability focus of the last reform of the CAP (2014-2020) it has continued on the environmental commitment path with the so-called compulsory green payment, established for direct payments from the 2015 season on. These compulsory agricultural practices centre on the crop diversification, on the existence of permanent pasture areas and areas of ecological interest.

At present, within the agricultural sector in Spain, organic production is pioneering, not only in Europe but around the world. Spain has a clear leadership role to play as principal producer of organic agriculture, reaching a new maximum in 2017 with 2 million hectares used for the cultivation of organic crops. In terms of organic livestock farming, over the last decade Spain has experienced progress growth, albeit at a slower rate and in a smaller scale as compared to organic agriculture. At national level, the roadmap is established by the Organic Production Strategy 2018–2020, with the aim of boosting this agri-food production system and the adaptation to circumstances and market trends.

To continue working on promoting and consolidating this type of production model, the Council of the European Union adopted, on 22 May 2018, the new regulation on the labelling of organic products, which will enter into force on 1 January 2021. This new regulation introduces the need to harmonise production standards, increase the supply chain control system, extend production standards to third countries and foster group certification for small producers.

2.3.1 AGRICULTURE

Spain, Italy, France and Germany represent more than half of European organic production. In 2017, surface area under organic cultivation was 2.1 million hectares. Only in the period 2010-2017 did growth exceed 26 %.

Andalusia, Castile - La Mancha and Catalonia account for more than 74,3 % of the surface area of organic agriculture in Spain.

Image: Organic logo of the European Commission

The management of inputs and the management of water in agriculture, especially in the Mediterranean region as one of the most vulnerable in Spain to climate changes, conditions the effort to rationalise and modernise the use of fertilisers and phytosanitary products and the use of water as much as possible. According to the Crop Area and Yield Survey, in 2018 22.2 % of surface area under use was used for irrigated crops. On the other hand, the studies of the *Survey on Water Use in the Agricultural Sector* published by the INE, show advances in trickle irrigation, which was used for almost 40% of water in 2016, compared to other less efficient techniques such as gravity irrigation (used for 33% of the water used). As an interesting initiative in water management it is worth mentioning the *Green Book on Water Governance*.

LIBRO VERDE DE LA GOBERNANZA DEL AGUA EN ESPAÑA

Green Book on Water Governance

Proposal for advancing in the collaborative construction of a water governance model that allows us to tackle current and future challenges in water management.

According to Eurostat, in 2017, 11.6 million tonnes of nitrogen fertilisers and 1.3 million tonnes of phosphate fertilisers were used, an increase of 8 % and a decrease of 9 % respectively compared to the year 2007. With regard to the sale of fungicides and bactericides in the 28 Member States, the total was 161 874 tonnes, of which 23.5 % were in Spain (37 982 tonnes), the country with the highest sales in these products , followed by Italy (32 642 tonnes) and France (29 770 tonnes).

Guaranteeing sustainable management of natural resources and climate action is the path that Spanish agriculture must tackle as it faces major local and global challenges. Modernisation and environmental efficiency must be considered necessary, focussing efforts on the rational use of water and energy and the rational use of agricultural inputs.

The pressure on the environment in the sector depends on the use of means of production and the consumption of water, among others. These inputs depend, to a great extent, on annual precipitation, a circumstance which conditions the figures for harvests and consumption, with annual variability that makes it difficult to study trends. In 2017, the prevalence of the use of nitrogen fertilisers was observed, with an increase in consumption (reaching 132 kg/ha), while the consumption of potassium and phosphate fertilisers was similar to previous years with an average of 26 and 30 kg/ha respectively. On the contrary, consumption of phytosanitary products in 2017 fell by 6.4 % compared to 2016 with a global reduction in the period 2011-2017 of 1.5 %.

2.3.1 AGRICULTURE

It is evident that the trend in irrigated surface area in Spain has been one of consistent growth over the last ten years (2009-2018), constituting a net increase of 352 981 hectares (from 19.8 % to 22.2 % in cultivated surface area). In 2018 it reached 3 774 286 ha, representing an increase of 1,1 % compared to 2017 and 3.3 % compared to 2016.

Nevertheless, the sector is increasingly more conscious of the environmental problem and Spanish organic production shows a sustained growth profile that places us as the number one producer in the European Union (16.6 % of the total) and leads the first places at global level. In 2017, the surface area dedicated to organic production in Spain exceeded two million hectares, a figure 3 % higher than the maximum in 2016. Only in the period 2010-2017 did growth exceed 26 %. Organic livestock farming has also seen progressive growth, although albeit at a slower rate and on a smaller scale, that organic agriculture. In 2017, the figure of 7 790 holdings was reached, a figure 0.6 % lower than the previous year, which saw 7 836 holdings. Another example of the incorporation of environmental practices in the sector can be found in the payment for agricultural practices beneficial to the climate and the environment also known as “green payment”, which in Spain continues to show positive progress in environmental terms, having consolidated the effects of the application of this assistance in 2017. The positive trend in terms of holdings and surface area receiving the green payment guarantees the sustainable management of natural resources and climate action.

2.3.1 AGRICULTURE

Fertiliser consumption

Consumption of fertiliser products in Spain, differentiated by nutrients (N, P_2O_5 and K_2O). The indicator is the result of the ration of consumption of fertilisers in absolute terms to the total fertilisable surface area, expressed in kg/ha.

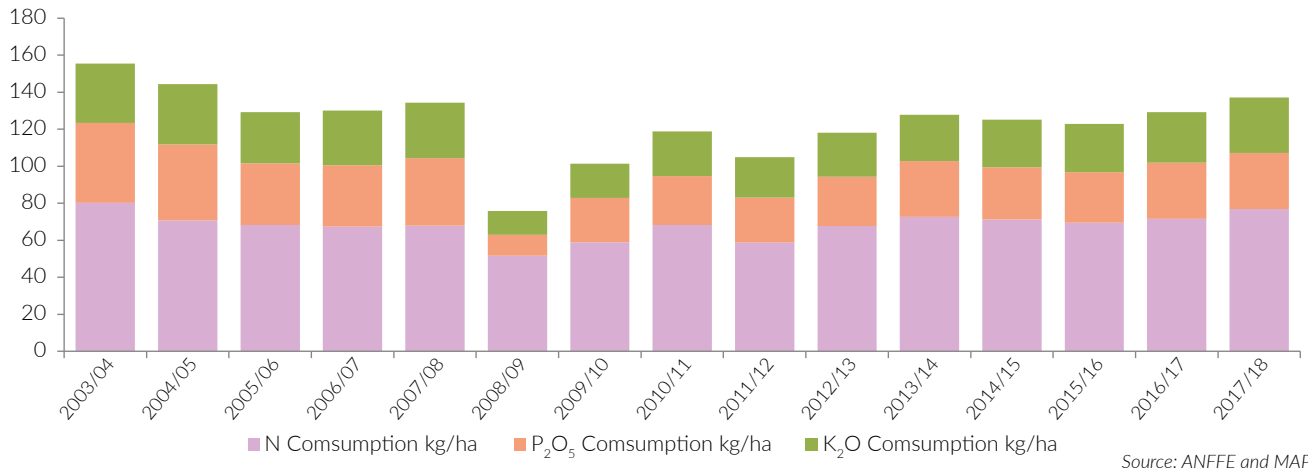
Justification

In order to protect the environment and the fertility of soil, it is necessary to ensure that the products used in vegetable nutrition or in the improvement of soil characteristics comply with agronomic efficacy and the absence of damaging effects for health and the environment.

The indicator allows for monitoring of Agenda 2030 - SDGs and the Spanish Strategy for Climate Change and Clean Energy (Horizon 2007-2012-2020) and the future National Energy and Climate Plan.

In the crop season 2017/2018, Spain employed a total of 5.1 million tonnes of fertilisers (as commercial product), a sum that represented an increase of 3.8 % with respect to the previous season. Recent seasons have seen an upward trend in the use of fertilisers. Stands out the reduction in the 2008/2009 crop season which reduced the level of consumption and gave rise to the sharp mathematical increase over the last 10 years of almost 62 % and an average annual consumption of 4 483 tonnes. Consumption of simple potassium fertilisers has seen the largest increase on the previous season (8,2 %), reaching 343 thousand tonnes. Simple nitrogen fertilisers saw consumption of 2 621 thousand tonnes and an increase over the last year of 3.4 % and complex fertilisers reached a consumption figure of 1 975 thousand tonnes with an increase of 6 % in the last campaign. Simple phosphate fertilisers were the only ones to see a reduction of 15.6 % in the 2017/18 season, with consumption at around 178 thousand tonnes.

Consumption of fertilisers according to fertilisable surface area (kg/ha)



Source: ANFFE and MAPA

In terms of the figures for consumption of nitrogen, phosphate and potassium fertilisers based on the fertilisable surface area, a prevalence in the use of nitrogen fertilisers is observed, with an increase in the 2017/2018 season of 76.8 kg/ha and an upward trend. Consumption of potassium fertilisers is similar, with 30 and 30.3 kg/ha respectively.
In 2017, Spain was among the top four countries in the EU for consumption of nitrogen, behind France, Germany and Poland. It was also the second country in terms of consumption of phosphate fertilisers, surpassed only by Italy.

Source: Ministry of Agriculture, Fisheries and Food, 2019 Encuesta sobre Superficies y Rendimientos Cultivos (ESYRCE) 2018. MAPA. Consult at: https://www.mapa.gob.es/es/estadistica/temas/estadisticas-agrarias/agricultura/esyrce/default.aspx
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Asociación Nacional de Fabricantes de Fertilizantes, 2019. Información sectorial: evolución del consumo.2017/2018. ANFFE. Consult at: http://www.anffe.com/informaci%F3n%20sectorial/evoluci%F3n%20del%20consumo/index.html

2.3.1 AGRICULTURE

Consumption of Phytosanitary Products

This indicator reveals consumption of phytosanitary products in relation to the applicable surface area in the period 2011-2017.

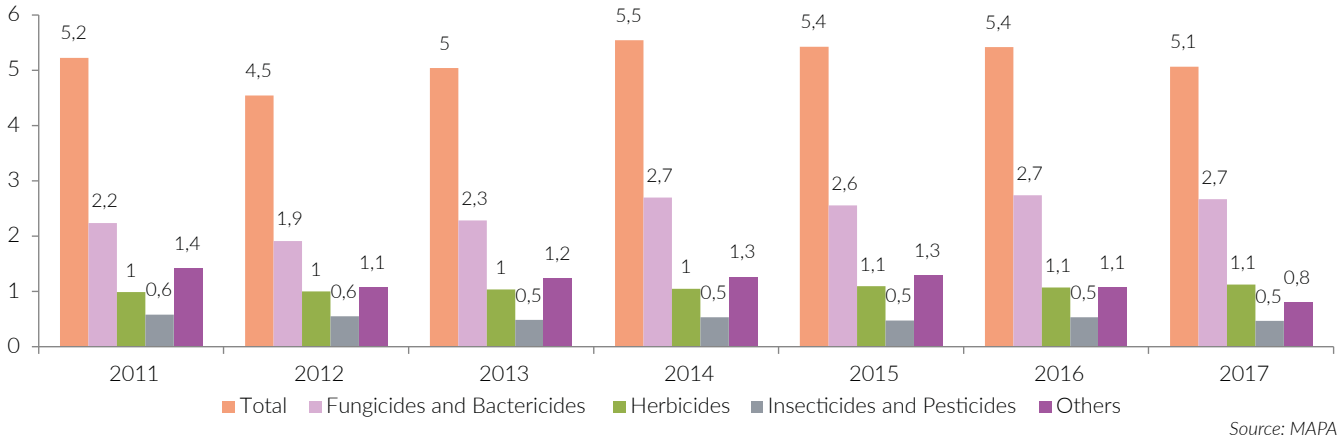
Justification

See justification of indicator "Consumption of fertilisers"

According to the *Phytosanitary Product Consumption Survey* of the Ministry of Agriculture, Food and Environment, in Spain in 2017 a total of 72 118 tonnes of these products were brought to market, which is a reduction of 6.4 % on 2016 (77 052 tonnes). For the complete period, 2011-2017, this reduction was 1.5 %. In 2017 the quantity brought to market can be analysed by type of product among which the active substances group stands out, comprised of fungicides and bactericides, representing 52.7 % of the total. Herbicides represented 22.3 %, while the group comprised of molluscicides, growth regulators and others, 15.8%. Finally, insecticides and acaricides represented the remaining 9.2 %.

The analysis of the relationship between the application of phytosanitary products and the surface area in uses, shows consumption of 5.1 kg/ha in 2017, a reduction of 6.6 % on the same data for 2016 and 3.1 % on the data for 2011. Despite this reduction over the last year, in the period 2011-2017 we observe a growing trend in the category of fungicides and bactericides and herbicides from 2011, while the other two groups (insecticides and acaricides on the one hand and molluscicides, growth regulators and others on the other) gradually see a fall in the quantities brought to market.

Consumption of phytosanitary products according to potentially treatable surface area (kg/ha)



Source: MAPA

According to Eurostat, the sale of phytosanitary products in the EU-28 reached 362 626 tonnes in the year 2017, which represented a decrease of 2.7 % on sales in (372 567 tonnes). 19.8% of sales were made in Spain, making it the country with the most sales of these products followed by France (18.5 %), Italy (15.5 %) and Germany (12.4 %).

Source: Ministry of Agriculture, Fisheries and Food, 2019 Encuesta de Comercializacón de Productos Fitosanitarios. Consult at: https://www.mapa.gob.es/es/estadistica/temas/estadisticas-agrarias/agricultura/estadisticas-medios-produccion/fitosanitarios.aspx
Ministry of Agriculture, Fisheries and Food, 2019 Encuesta sobre Superficies y Rendimientos Cultivos (ESYRCE). Consult at: https://www.mapa.gob.es/es/estadistica/temas/estadisticas-agrarias/agricultura/esyrce/default.aspx

2.3.1 AGRICULTURE

Irrigated area

The indicator shows the proportion of the irrigated agricultural area within the total national agricultural area, as a percentage. The data are expressed nationwide and for autonomous communities.

Justification

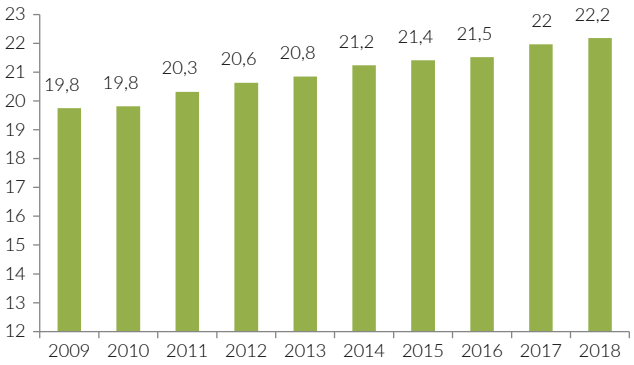
The incorporation of new irrigated surface area may generate a water supply deficit in many territories in the framework of climate change, which means efficiency of this resource in all irrigated area must also be improved.

The indicator allows for the monitoring of the 7th EAP, Agenda 2030-SDG, the Spanish Strategy for Climate Change and Clean Energy and the PIMA Adapta-AGUA Plan among others.

Irrigated surface are in Spain has continued to grow over the last ten years (2009-2018), constituting a net increase of 352,981 hectares (from 19.8 % to 22.2 % in cultivated surface area). According to the *Area and Crop Yield Survey* (ESYRCE), irrigated surface area in Spain has grown in 2018 to reach 3 774 286 ha, an increase of 1.1 % on the 3 733 695 ha in 2017 and 3.3 % in respect of the 3 655 417 ha for 2016.

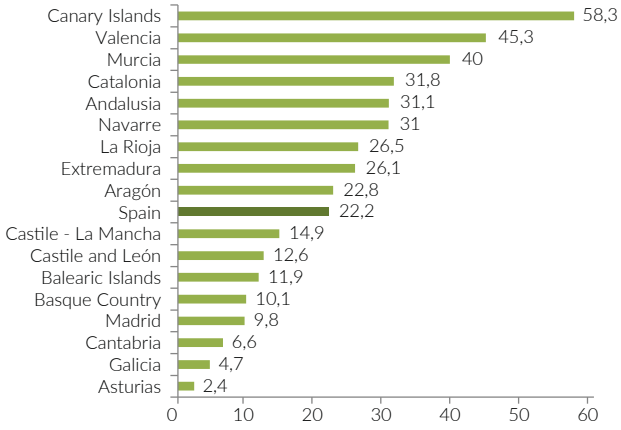
In 2018, the autonomous regions with the highest irrigated area were Andalusia with 1 102 144 hectares (29.2 % of the national total), Castile - La Mancha with 553 969 hectares (14.7 %), Castile and León with 448 680 hectares (11.9 %) and Aragon with 408 996 hectares (10.8 %). Cantabria and Asturias were the autonomous regions with the lowest irrigated surface area, with 463 hectares and 599 hectares respectively (less than 0.1 % in both cases).

Irrigated area with respect to the total agricultural area (%) Year 2018



Source: MAPA

Irrigated area with respect to the total agricultural area (%) Year 2018



Source: MAPA

The Spanish Strategy for Climate Change and Clean Energy establishes the objective of improving the energy efficiency of irrigation both in terms of the provisions of hydrological resources and in irrigation systems (gravity, pressure). While a specific quantitative target is not established, the measure allows for the progressive scope to be verified.

Source: Ministry of Agriculture, Fisheries and Food, 2019 Encuesta sobre Superficies y Rendimientos Cultivos (ESYRCE) 2018. MAPA. https://www.mapa.gob.es/es/estadistica/temas/estadisticas-agrarias/agricultura/esyrce/default.aspx

2.3.1 AGRICULTURE

Organic farming

This indicator describes the trend in area dedicated to organic agricultural production.

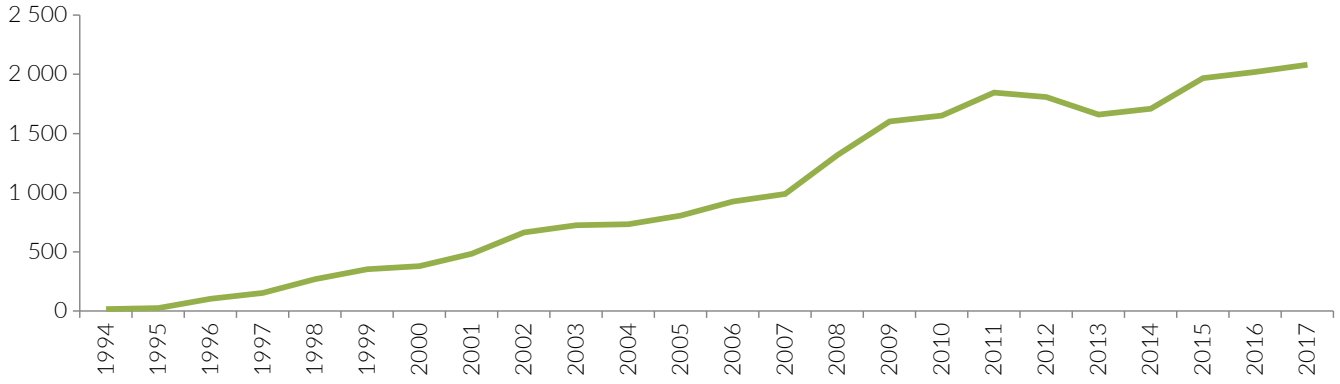
Justification

Organic agriculture is presented as a production that is committed to the sustainability of the territories, boosted by European regulation and falls under the food quality policy and the adaptation to climate change policy.

The indicator allows for monitoring of Agenda 2030 - SDGs and the Spanish Strategy for Climate Change and Clean Energy (Horizon 2007-2012-2020).

In 2017, the surface area dedicated to organic production reached 2 082 200 hectares, a figure 3 % higher than the maximum in 2016. In the period 2010-2017 alone, growth was in excess of 26 %, but if we take into account the last 20 years (1997-2017) the surface area under organic production has multiplied almost by eight.
In absolute terms, Andalusia is the autonomous community with the largest surface area dedicated to organic farming (974 392,9 hectares), even after a year-on-year reduction of 0.2 %, accounting for 46.8 % of the national total. It's followed by Castile - La Mancha, with 391 353 hectares (with an annual reduction of 4.8 % and a contribution to the national total of 17.9 %), and Catalonia with 200 749,8 hectares (with an increase of 16.8 % and a contribution of 9.6 %).

Area dedicated to organic farming (thousands of hectares)



Source: MAPA

In 2017 the type of organic agriculture that accounted for the largest surface area was permanent pastures and grassland, which accounted for 52.1 % of the total. Cultivation of arable land accounted for 22.5 % (within which the largest surface area was occupied by cereals with 44 %). Finally, the category permanent cultivation represented 25.4 % with the olive, nut and the vine cultivation being the largest categories therein (36.9 %, 27.8 % 20.2 % respectively).

The Organic Production Strategy (2018-2020) of the Ministry of Agriculture, Food and Environment seeks to foster growth in the area destined for organic cultivation and to support the growth and consolidation of organic production with a special focus on organic livestock farming and the industrial sector.

Source: Ministry of Agriculture, Fisheries and Food, 2019 Organic farming. Statistics 2017. Sub-directorate General for Differentiated Quality and Organic Farming MAPA.
Consult at: https://www.mapa.gob.es/es/alimentacion/temas/produccion-ecologica/

2.3.1 AGRICULTURE

Organic livestock farming

This indicator describes the number of organic livestock holdings. The data is broken down by type of holding and distribution across the different autonomous communities.

Justification

Organic agriculture is presented as a production that is committed to the sustainability of the territories, boosted by European regulation and falls under the food quality policy, animal welfare and the adaptation to climate change policy.

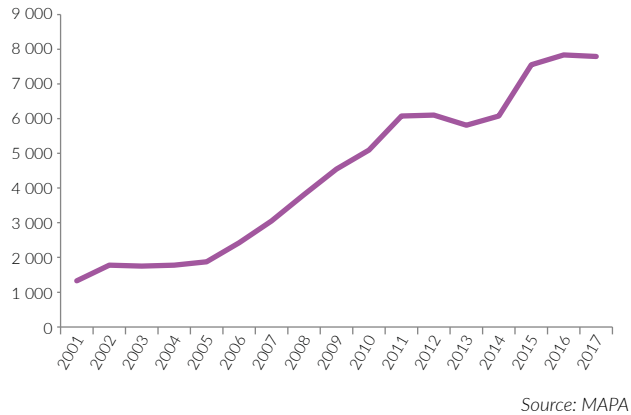
The indicator allows for monitoring of Agenda 2030 - SDGs and the Spanish Strategy for Climate Change and Clean Energy (Horizon 2007-2012-2020).

In Spain, organic livestock farming has seen progressive growth, albeit slower and on a smaller scale than livestock agriculture, with a slight reduction in holdings in the years 2013 and 2014. In 2017, the figure of 7 790 holdings was reached, a figure 0.6 % lower than the previous year, which saw 7 836 holdings.

Of the 7 790 organic holdings registered in 2017, 47.7 % were cattle holdings (3 714 holdings) and in terms of the type of production, 95.2 % of those were focussed on meat production. That was followed by sheep farming with 2 091 holdings (26.8 % of the total), with the majority also focussed on meat production (96 % of the total). Goat and horse holdings accounted for 721 and 479 holdings respectively. Finally, there were 379 poultry farms, mostly dedicated to egg production (73.3 %).

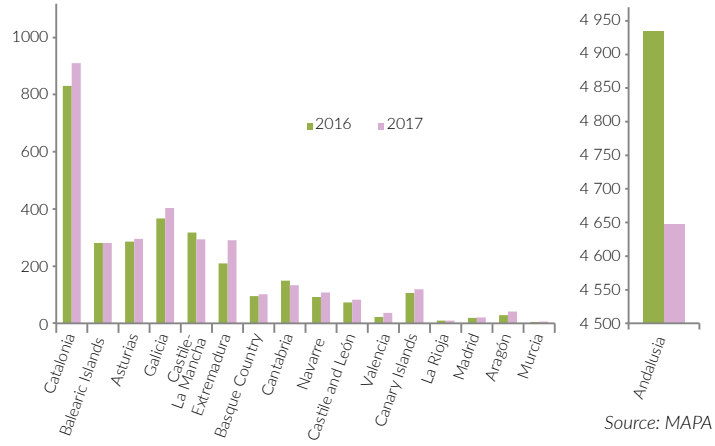
The trend in the number of organic livestock holdings has been volatile over the last year. The number of apiculture and poultry holdings increased by 21.6 % and 11 % in 2017 respectively, while other categories such as sheep, goat, pig and equine holdings saw reductions of between 4 and 5 %. Nevertheless, the trend over the last 16 years shows major percentage increases of holdings, in the order of 487 % on average, especially for equids (3 321.4 %) and goats (824.4 %)

Number of organic livestock holdings



Source: MAPA

Number of organic livestock farms by autonomous community



Source: MAPA

Andalusia, with 4 647 holdings representing 59.7 % of the national total, is the autonomous community with the highest number of organic livestock holdings. In second place is Catalonia, with 913 holdings and 11.7 % of the total. Galicia with 405 holdings (5.2 % of the total) and Asturias with 296 holdings (3.8 %) are the third and fourth autonomous communities in terms of numbers of organic holdings.

Source: Ministry of Agriculture, Fisheries and Food, 2019 Organic farming. Statistics 2017. Sub-directorate General for Differentiated Quality and Organic Farming MAPA.
Consult at: https://www.mapa.gob.es/es/alimentacion/temas/produccion-ecologica/

2.3.1 AGRICULTURE

Number and area of holdings under "green payment"

This indicator shows the figure for holdings (number and area) that execute practices included in the "green payment regime" in Spain.

Justification

The improvement in the environmental performance of agriculture is one of the objectives of the latest reform of the CAP, evaluating how to apply determined compulsory agricultural practices beneficial to climate and the environment.

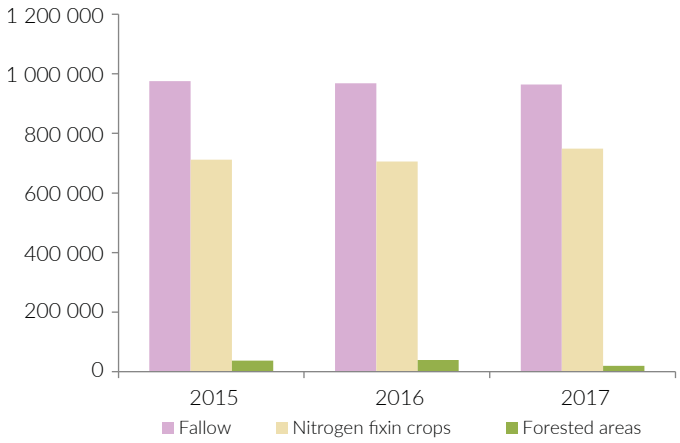
The indicator allows for monitoring of the CAP (2014-2020), the 7th EAP, the National Rural Development Programme (2014-2020) Agenda 2030-SDGs and the Spanish Strategy for Climate Change and Clean Energy (Horizon 2007-2012-2020) as well as the future National Integrated Energy and Climate Plan.

The three-year period for the payment for agricultural practices beneficial to the environment or "Green Payment" in Spain continues to show a positive trend in environmental terms, with the effects of the application of this assistance being consolidated in 2017. This increase in holdings and area receiving the green payment guarantees the sustainable management of natural resources and climate action, established in both the *Spanish Strategy for Climate Change and Clean Energy* and in the current *Rural Development Programme*.

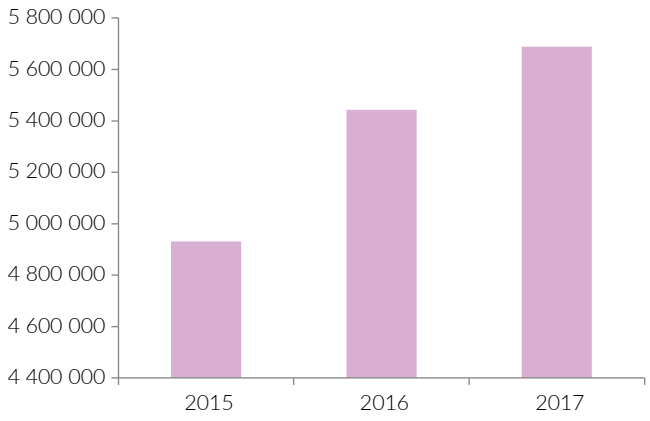
The practice of crop diversification seeks an improvement in the structure and quality of soil as well as greater development of biodiversity. In the assessment period 2014-2017, the total number of holdings with more than 10 ha obliged to diversify continues to fall, dropping from 177 158 holdings in 2015 to 168 782 holdings in 2017. Similarly, it is noted that the number of holdings of more than 10 ha with a single crop prior to the application of the GP has seen a sharp decrease (from 14 % to 5 %), reducing the number of single-crop holdings and moving towards much more diversified holdings. That's why the number of holdings of more than 10 ha with three or more crops has seen a major increase (from 61 % to 85 %).

An increase of 15 % in the area used for permanent grasslands. This is also positive because of the protection these provided against erosion and desertification, conserving the organic material of soil and preventing compacting, conserving the habitat and fauna and making a positive impact to carbon capture.

Area of Ecological Interest (ha)



Area used for permanent grasslands (ha)



Source: FEGA (MAPA)

The total areas of ecological interest (AEI) in Spain rose to 1 733 398 ha in the 2017 season, a figure that has been increasing continuously since 2015 (0.53 %). A total of 964 389 ha was declared AEI fallow land, representing approximately 23 % of total fallow land in Spain (2 486 155.94 ha).
Similarly, of the 1 831 630,30 ha of total area of protein cultivation, of leguminous and oil-producing plants, in Spain, 748 897 ha have been declared nitrogen-fixing cultivation (NFC), valid for AEI, which represented 41 % of said total surface area declared NFC. Thus, it is noted that Spain's total AEI has risen approximately 20,000 ha with respect to the previous season.

Source: Ministry of Agriculture, Fisheries and Food, 2019 Report on the application of payment for practices beneficial to the climate and environment ("green payment") for the 2017 season.
https://www.fega.es/sites/default/files/Informe_Fega_Greening_2017.pdf

2.3.2 FISHING

There is a broad global consensus in relation to the unsustainable levels that the pressures placed on marine ecosystems have reached caused by human activity. The United Nations Food and Agriculture Organisation (FAO) warns that 61 % of marine fish populations are fully exploited for commercial purposes, with 29 % overexploited and that 90 % of large predator fish have disappeared. Therefore, to satisfy the growing demand for fish as food, as a key element of food security and nutrition for human beings, several of the Sustainable Development Goals of the 2030 Agenda focus on this area.

In 2015, the UN General Assembly adopted the Agenda 2030 for Sustainable Development, a plan for people, the planet and prosperity. Together with the Paris Agreement it sets out a roadmap on a global level for the implementation of sustainable fishing management that ensures adaptation on behalf of countries to climate change and a fight against poverty based on reaching targets set out in the 17 Sustainable Development Goals.

In 2018, the FAO also published a report assessing the effects of climate change on fishing and agriculture. With respect to primary production of the oceans, a reduction of 6 % is envisaged for 2100. Recent forecasts estimate the reduction in land and marine production in coastal countries at 85 %, even though this high percentage can vary based on the national capacity to adapt. According to the figures for greenhouse gases and looking at the geographic variability, the different models estimate a variation of the total fishing catch of less than 10 %, with tropical regions in particular identified as the most vulnerable to these negative effects. The conclusions of this study underline the importance of responding in a coordinated manner to the great challenge of climate change in order to safeguard all food systems.

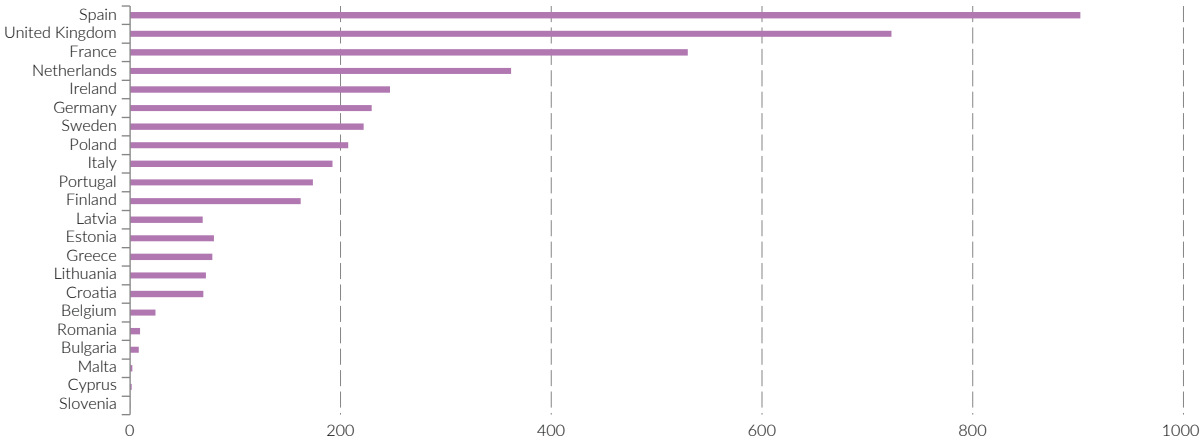
It is expected that climate change will causes changes in the availability and trade in fishing products and aquaculture, with significant geopolitical and economic consequences, and with respect to food security, especially in those countries that depend to a great extent on the sector for food and subsistence. (FAO, 2018)

2.3.2 FISHING

Faced with this panorama and evidence of overfishing, the Europe Union Member States are responding to the international agreements on sustainability and climate change by taking measures to ensure the sustainability of the fishing sector and preventing the size of populations from being threatened in the long run. The Common Fisheries Policy (CFP) for the period 2015-2020 is the framework for ensuring that fishing and aquaculture are sustainable from an environmental, economic and social perspective, thus complying with the agenda set out by the UN.

According to the latest report published on the CFP (2018), the EU is positioned as the fourth largest producer in the world, with fishing production representing 5 % of global production. Fishing plays a crucial role in employment and economic activity in several regions of the European Union, especially in European coastal areas. In the specific case of Spain, total catches for Spanish vessels in 2017 were 902 163 tonnes and they generated 2 034 million euros placing the country as one of the European leaders regarding employment and production in the sector.

Total catch of the EU 28. Year 2017 (thousands of tonnes of live weight)



Source: Eurostat

Spain is leader in volumes of fish in the EU followed by Denmark, the United Kingdom and France. Together they represent 57.5 % of the total EU catch. In terms of generating employment, Spain accounts for a quarter of all employment, and together with Greece, Italy and Portugal, 73 %.

In parallel with the positive economic and social impact of this sector, one of the greatest threats to the world's fishing resources is undeclared and unregulated illegal fishing. It is calculated that the illegal catch in the world could reach 15 % of world catches. In this sense, the European Union has agreed that by the year 2020 at the latest, all fish populations will be exploited on a sustainable basis. In practice, this means implementing a system of catches that do not affect the productivity of populations over the long term. This is what is known as Maximum Sustainable Yield (MSY).

The Fisheries Council of the European Union brought together the Ministries with competencies for fishing in different Member States, in December 2017, to set the Total Allowable Catches for the year 2018. The agreement reached contributed to improving, in general, the Spanish quotas for 2017, being the number of populations managed at MSY levels, nine more than in 2017. It is estimated that a total of 44 reserves were measured at MSY levels, compared to just five in 2009.

According to European legislation, the total capacity of the fishing fleet cannot grow further and both the decommissioning of boats and the reduction of fleets (financed with public aid) must be permanent. Over the last decade the size of the Spanish fishing fleet has continued to be progressively reduced, having fallen 18.4 % in number of vessels in the 2009-2018 period, 21.3 % in average tonnage, expressed in gross tonnage GT, and 17 % in power (kW).

2.3.2 FISHING

As support for meeting the objectives of the CFP and to preserve the fishing resources and their sustainable exploitation, Regulation (EU) 2017/1004 establishes a framework for the compilation, management and use of the data of the fishing sector and support for scientific assessment. This regulation is complemented by Implementation Decision (EU) 2016/1251 with the adoption of the multiannual programme of the Union for the compilation, management and use of the data of the fishing and aquaculture sector for the period 2017-2019.

Looking at the financial support aspect to fishing management, the European Maritime and Fisheries Fund (EMFF, 2014-2020) has had, and has, a crucial role as a cohesion fund for maritime and fishing policies. These priorities seek to fulfil the sustainable development objective of fishing, aquaculture and associated activities. The EMFF is currently in the process of negotiations for the period 2021-2027 and among other questions is attempting to conserve the principals of the CFP, the maintenance of the financial allocation for the previous procedure and the reduction of the administrative load of the activity.

In Spain, in compliance with the provisions of *Law 41/2010, of 29 December, on protection of the marine environment*, the Spanish Network of Marine Protected Areas (RAMPE) was formally created, comprised of protected marine environment spaces, representative of marine natural heritage and including marine reserves of fishing interest. The marine reserves is a specific measure that has the objective of guaranteeing sustainable exploitation of resources of fishing interest.

Marine fishing reserves

Marine Reserves of Fishing Interest

1. Masía Blanca
2. Islas Columbretes
3. Levante de Mallorca-Cala Rajada
4. Isla de Tabarca
5. Cabo de Palos - Islas hormigas
6. Cabo Tiñoso
7. Cabo de Gata - Nijar
8. Isla de Alborán
9. Isla Graciosa
10. Isla de la Palma
11. La Restinga - Mar de las Calmas

Source: MAPA

The European Federation of Aquaculture Producers, which in 2018 celebrated its 50th anniversary, shows the importance of this sector at European level, which at present is comprised of 14,000 small and medium-sized enterprises that produce up to 15 different species, which employ 85 000 people.

Spain's Multiannual National Strategic Plan on Aquaculture for 2014–2020, framed within the new Common Fisheries Policy, attempts to respond to the strategic guidelines on suitable development of aquaculture proposed by the European Commission. The main objective is to contribute to the expansion and potential of a sector considered a strategic activity in the European Union. The increase in Spanish aquaculture production, from the improvement in sectoral planning and the selection of new Areas of Aquaculture Interest is one of the four strategic objectives defined.

Innovation is configured as one of the priority solutions for the improvement of the competiveness of the Spanish fishing sector. This fact, together with the need to adapt and improve the new circumstances of change and financing the Horizon 2020 programme and the European Maritime and Fisheries Fund, formed the basis upon which the General Secretariat for Fisheries is drafting the Strategic Innovation and Development Plan for Fishing and Aquaculture (2014–2020). This Plan incorporates major advances and opportunities for the economy and blue growth.

2.3.2 FISHING

Blue Growth is a long-term strategy to support sustainable growth in the marine and maritime sectors. The importance of the seas and oceans as motors for the European economy thanks to their immense potential for innovation and growth is reflected in the Europe 2020 Strategy, which is based on smart, sustainable and integrated growth, with fostering technological research and development (R&D) as one of the main objectives.

Image: Blue Growth logo MAP.

In the context of the blue economy and blue growth, the years 2017 and 2018 have seen many meetings, discussions and agreements signed. In this regard it is worth highlighting the draft royal decree bill that established the development of fishing-tourism activity with respect to extraction activity and aquaculture exercises on board fishing boats. The First International Meeting on Knowledge and Blue Growth (InnovAzul 2018) was also held in Spain as was the WestMed initiative, fostering blue growth in the western Mediterranean.

The evolution of the sector in Spain shows us a progressive adjustment of our fishing fleet, which has been reduced in the period 2009-2018 by 18.4 % in number of vessels, 21.3 % in tonnage and 17 % in power (kW). With respect to the situation in 2017, there is a reduction of 174 vessels (1.9 %), 2 354 GT (0.7 %) and 15 690 kW (2 %). However, the reduction of the fleet was accompanied by a reduction in catches. On the contrary, these increase in 2017 by 4.6 % compared to 2016.

Aquaculture is proving an increasingly more developed ally for the demand for fish, regulating the market and the sustainable management of stocks. This activity increased marine production by 9.1 %, while continental aquaculture production saw considerable growth, rising to a total of 15 601 tonnes.

2.3.2 FISHING

Number of vessels and fishing fleet capacity

This indicator provides a snapshot of the Spanish fishing fleet through a number of vessels that comprise it and some of its characteristics: gross tonnage (GT) and power (expressed in kilowatts (kW)).

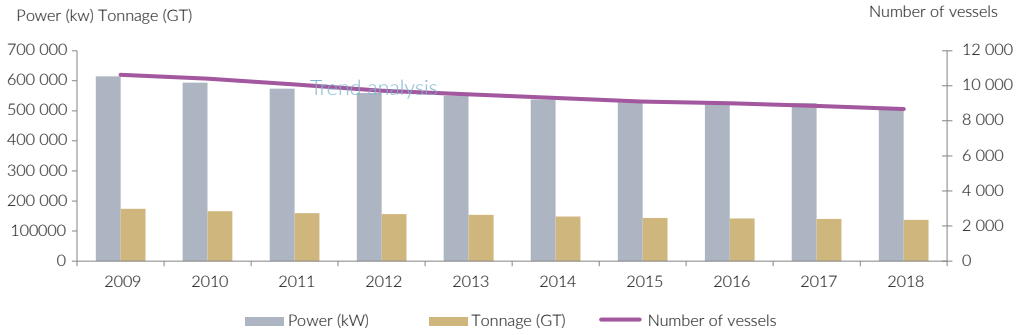
Justification

Management of the fleet constitutes one of the main objectives of the common fisheries policy to work on the line of sustainability. The indicator allows the monitoring of SDG 14 (Life below water) and the Common Fisheries Policy (2014-2020).

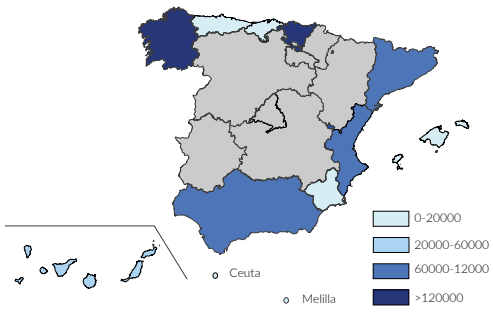
The evolution of the sector in Spain shows us a progressive adjustment of our fishing fleet, which has been reduced in the period 2009-2018 by 18.4 % in number of vessels, 21.3 % in tonnage and 17 % in power (kW). The Statistics of the Fishing Fleet as of 31 December indicate the total fishing grounds for a total of 8, 972 boats with a tonnage of 331 458 GT and a power of 777 954 kW. With respect to the situation in 2017, there is a reduction of 174 vessels (1.9 %), 2 354 GT (0.7 %) and 15 690 kW (2 %). Looking at the location of fishing grounds, 93.7 % fished in national fishing grounds (8 674 vessels), while 2.1 % (192 vessels) fished in international fishing grounds and 1.2 % (106 vessels) in EU fishing grounds.

In terms of autonomous communities in 2018, Galicia stood out for the number of boats (4 400) followed by Andalusia (1 442) and the Canaries (766). In terms of total tonnage and power, Galicia (137 830 GT and 276 418 kW), the Basque Country (87 232 GT and 139 367 kW) and Andalusia (30 181 GT and 103 997 kW) stood out.

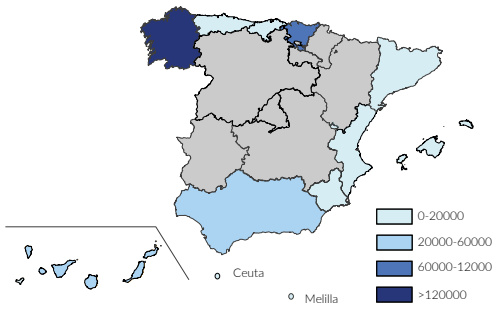
Number of vessels and fishing fleet capacity (national fishing grounds)



Power of the fishing fleet (kW). 2018



Tonnage of the fishing fleet (GT). 2018



Source: MAPA

Trend analysis

FISHING	TREND 2010-2017	PAST YEAR TREND	OBJECTIVES OF DIFFERENT PLANS AND STRATEGIES	OBJECTIVES OUTLOOK
Number of vessels and fishing fleet capacity	○	○	The Spanish Administration continued in 2017 on its line of action referring to the structural adjustment in fishing capacity, applying measures for management, competitiveness, development and fishing control and monitoring.	○

Source: Eurostat, 2019. Statistics on fisheries. Consult at: https://ec.europa.eu/eurostat/web/fisheries/statistics-illustrated
Dirección General de Asuntos Marítimos y Pesca (Comisión Europea), 2019. La Política Pesquera Común en datos y cifras. Información estadística básica. 2018. Consult at: https://publications.europa.eu/es/publication-detail/-/publication/08d4994e-4446-11e8-a9f4-01aa75ed71a1
Ministerio de Agricultura, Pesca y Alimentación, 2019. Estadística de la flota pesquera. Consult at: https://www.mapa.gob.es/es/estadistica/temas/publicaciones/anuario-de-estadistica/2018/default.aspx

2.3.2 FISHING

Fishing fleet catches

The indicator shows the total volume of catches by the Spanish fleet (expressed in tonnes of live weight) in the national fishing grounds (adjacent waters) and in the fishing grounds in the rest of the world, comparing them to catches in the European Union.

Justification

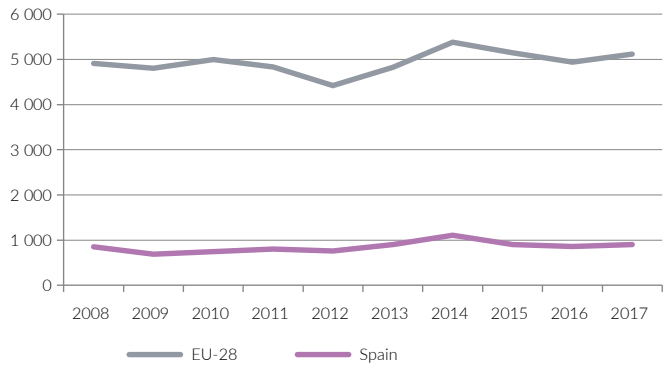
A fishing management system is beneficial because it protects the reproduction of populations to maintain high yield over the long term: 1) Lays the foundations of a profitable industry; 2) Distributes fishing opportunities equitably; 3) Conserves marine resources.

The indicator allows the monitoring of SDG 14 (Life below water) and the Common Fisheries Policy (2014-2020).

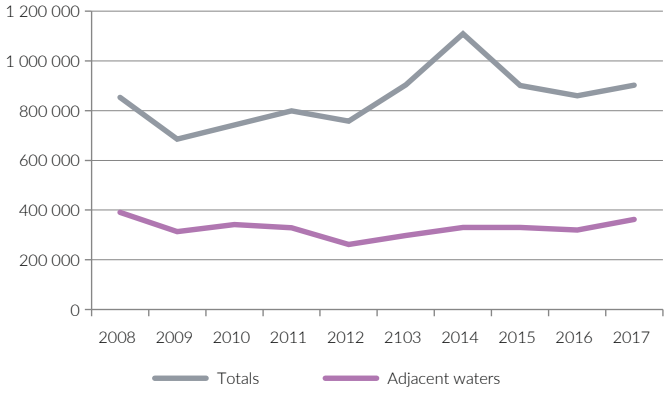
Total caches by Spanish vessels in 2017 amounted to 902 163 tonnes, which represented a percentage increase of 4.6 % (5.7 tonnes) compared to 2016. This represents 17.6 % of the total European catch, established at 5.1 million tonnes although these figures do not include data on catches for Greece and Latvia.

The Spanish fleet's captures in adjacent waters represent 40.1 % of the total catch and in 2017 were 361 842 tonnes with an increase of 12.9 % on 2016. The North-East Cantabrian Sea is the adjacent area with the highest catch volume (138 865 tonnes), followed by the Gulf of Cádiz and Portugal (102 867 tonnes) and the Mediterranean and Black Sea (86 851 tonnes). In terms of the comparison with 2016 all areas registered increases in catches while the Canaries recorded a greater percentage change (increase of 57.3 %) followed by the North-East Cantabrian Sea (12.6 %) and the Gulf of Cádiz and Portugal (9.2 %).

Total catch of the European Union and Spain (Thousands of tonnes)



Spanish fishing fleet catches (tonnes)



Source: Eurostat

The main objective of the management of fishing within the Common Fisheries Policy is to guarantee high yield over the long term for all populations, known as Maximum Sustainable Yield (MSY), establishing the year 2020 as the deadline for compliance with this binding objective. Another even more important objective is to reduce or elevate unintended captures and wasteful practices through the gradual introduction of the landing obligation, which also considers regionalisation and consultation of stakeholders.

Source: Eurostat, 2019. Statistics on fisheries. Consult at: https://ec.europa.eu/eurostat/web/fisheries/statistics-illustrated
Dirección General de Asuntos Marítimos y Pesca (Comisión Europea), 2019. La Política Pesquera Común en datos y cifras. Información estadística básica. 2018.

2.3.2 FISHING

Aquaculture production

This indicator shows aquaculture production in Spain in tonnes, based in the statistics offered by the Junta Nacional Asesora de Cultivos Marinos (JACUMAR).

Justification

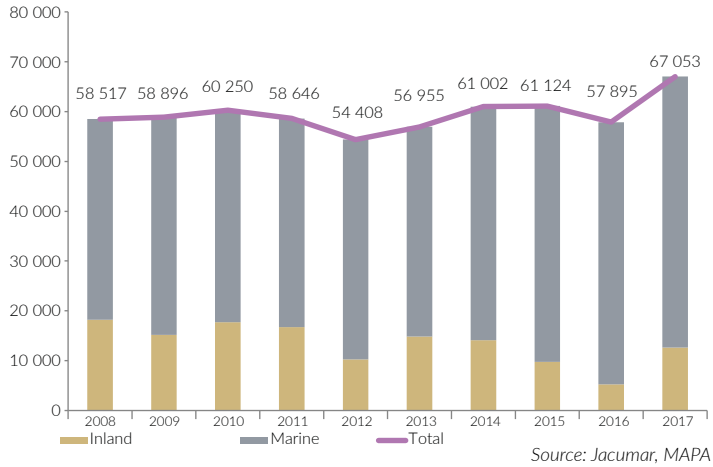
According to the FAO, aquaculture is the fastest growing production sector, accounting for 50 % of fish production globally. In Europe it is a strategic economic activity and a key pillar of blue growth. It responds specifically, therefore, to one of the Sustainable Development Goals, related to food security. This indicator, therefore, allows us to monitor 2030 Agenda Sustainable Development Goals 2 (Zero hunger) and 14 (Life below water), the Common Fisheries Policy and the Spanish National Strategic Plan on Aquaculture (2014–2020).

The most recent data indicate that in Spain in 2017 there was total production in the aquaculture sector of 351 050 tonnes of live weight. Of this volume, 93.9 % was marine aquaculture production (329 786 tonnes) and the remaining 6.1 % inland (21 264 tonnes). With regard to the 2016 data, marine aquaculture grew 9.1 % (27 581 additional tonnes), while inland aquaculture production saw a considerable increase of a total of 15 601 tonnes (275.5 %) due to the increase in breeding for repopulation. By type of production, in marine aquaculture mussel breeding stood out, accounting for 78.4 % of the national agricultural production.

Production of specific fish species (period 2008-2017) remained around 60,000 tonnes annually, while in 2017 there was a significant increase of 15.8 % compared to the previous year (67 053 tonnes). Inland aquaculture stands out in particular with an increase in production of 142.1 % (7398 tonnes). By types of fish, production of sea bass dominates with 31.3 of total production (20 957 tonnes), followed by bream, with 19.4 % (12 990 tonnes) and the rainbow trout with 18.7% (12 523 tonnes)

In 2017, organic production was estimated at 337 tonnes, exclusively for inland breeding and mainly for the rainbow trout. This constitutes a reduction of 26.6 % with regards to 2016 for inland fish and a total marine acquaculture production (150 tonnes in 2016).

Marine and inland aquaculture production (tonnes)



Source: Jacumar, MAPA

Aquaculture production 2017 (tonnes)

MARINE		CONTINENTAL	
Molluscs	275 128.4	Fish	12 605.1
Fish	54 447.8	Fish and crustaceans	8 322
Crustaceans	200.2	Organic production	337
Algae	7.2		

Source: Jacumar.

Analysis of trend

AQUACULTURE PRODUCTION	TREND 2010-2017	PAST YEAR TREND	OBJECTIVES OF NATIONAL STRATEGIC PLAN ON AQUACULTURE FOR 2014–2020). STRATEGIC OBJECTIVE 3 INDICATORS (SO3)	
Aquaculture production	○	○	**SO3. S.5** Increase in production of marine fish and economic value 101485/724 **SO3. S.6** Increase in production of continental fish (Tn and MĐ): 32515/118 **SO3. E.7.** Increase in production of molluscs (Tn and MĐ): 308648/224 **SO3. E.8** Increase production of crustacean and algae (Tn and MĐ): 441/9	○
Production of organic aquaculture production	○	○	**SO3. E.12** Percentage of production certified as organic (2%) to 2020.	-

Source: Junta Nacional Asesora de Cultivos Marinos (JACUMAR), 2019. La acuicultura en España. 2018. JACUMAR. Consult at: http://www.apromar.es/content/la-acuicultura-en-espa%C3%B1a-2018
Ministerio de Agricultura, Pesca y Alimentación, 2019. Estadísticas pesqueras: Producción de acuicultura. 2017. MAPA. https://www.mapa.gob.es/es/estadistica/temas/estadisticas-pesqueras/acuicultura/encuesta-establecimientos-acuicultura/produccion/

2.3.3 INDUSTRY

According to the last forecasts issued by different international bodies, in 2018 global economy has grown over 3.5 %, keeping the trend of the past years. However, in the European Union the economy has grown with less intensity than in 2017 mainly due to the tensions in foreign trade policy, namely between China and the US and to the impact of Brexit.

Spanish economic growth continued for a fifth successive year in 2018: 2.6 %, which represents four tenths less than in previous year, despite registering an increase greater than the surrounding economies. The increase in GDP has been caused by the domestic demand, mainly by household consumption whose expansive effect has been driven by job creation. For future years, the Spanish growth is expected to continue moderating, in line with the expected trend for the European economy.

Over the last decade (2009-2018), Gross Value Added (GVA) of industry, without taking into account the construction industry, in the EU-28 has increased 34.5 %, while GVA in Spain has increased 15.7 %.

According to Eurostat's provisional data, updated in June 2019, in 2018 Spain contributed 7.01 % of the GVA of EU-28 industry, ranking fifth among the countries with the highest contribution, behind Germany, Italy, the United Kingdom and France.

Likewise, INE (Spanish Statistical Office) National Accounts data report a 1.1 % increase in industrial GVA in Spain in 2018, i.e. the sector keeps growing for the fifth consecutive year, although this rate is 3.3 points lower than that of the previous year. In addition, the Industrial Production Index (IPI) registered a 0.3 % advance with respect to 2017, highlighting the dynamism in sectors such as telecommunications or the manufacture of electronic components.

In 2018 in Spain, industry continued to rank second in jobs by sector, with 14 %, ahead of construction (6.3 %) and agriculture (4.2 %) and only behind the service sector (75.1 %). The number of jobs in the industrial sector grew by 2.3 % in 2018 compared to 2017, which was also lower than the growth registered in 2017 (4.96 %).

With the aim of increasing productivity, competitiveness and the contribution of the industrial sector to GDP and employment, in line with sustainability and the policies of the European Union, in February 2019 the Government presented the General Guidelines of the New Spanish Industrial Policy 2030.

These Guidelines are framed within the Agenda for Change and are aligned with the Strategic Framework for Energy and Climate Change. The aim is to lead the Government's reforms towards meeting the United Nations Sustainable Development Goals 2030, directing Spanish industry towards innovation and efficient production with low or no environmental footprint in order to strengthen the national and international competitiveness of companies.

2.3.3 INDUSTRY

The Ministry of Industry is working on three major initiatives to address these challenges:

1. The State Compact for the Industry to provide security for companies and stimulate new industrial investments.
2. Industrial Policy Strategy for the Spanish 2030 Agenda in order to define the measures needed to foster growth in the Spanish industrial sector, to improve its competitiveness and generate a sustainable and inclusive growth.
3. Law on industry: approval of a new law to update the industrial regulatory framework of 1992 to the new digitalisation and decarbonisation challenges.

This industrial policy would be organised around 10 lines of action, among which stand out a greater penetration of digitalization and innovation in the national industrial fabric; the improvement of employability especially among young people and women; the stimulation of the increase of business size; and the improvement of financing.

Among other essential aspects of the industrial fabric, the document addresses energy costs. In this sense, the regulation of the Electro-intensive Consumer Statute is being developed, which includes the instrument for granting aids attributable to the costs of indirect emissions, and the call for which has been authorised by the Council of Ministers. In 2018 the maximum amount of aids was 91 million euros (70 million provided by the Ministry for Ecological Transition and the rest by the Ministry of Industry, Trade and Tourism) attributable to the indirect emissions costs incurred in 2018. This figure is fifteen times higher than the last ordinary call (2018), in which 6 million euros were allocated. The beneficiaries of said aids must comply with the obligations set forth in Article 5 of *Royal Decree-Law 20/2018, of 7 December on urgent measures to foster economic competitiveness in the industry and trade sectors in Spain* and other regulations relating to the maintenance of industrial activity.

The aim of the New Spanish Industrial Policy 2030 is to provide a framework of stability to boost economic growth and strengthen the competitiveness of companies based in Spain that operate in international markets and cannot pass on energy costs to the selling price of their products.

Also in April 2019, the Council of Ministers approved the 2030 Strategic Framework in SME Policy Small and Medium Enterprises, with the aim of improving the competitiveness of small and medium enterprises with regard to the challenges of a global and digitalized economy, and to contribute to the creation of an environment to foster their growth. At the same time, a total of 456 million euros was approved to boost the growth, internationalisation and energy saving of SMEs. The main purpose of these aids is, among others, to encourage and promote the implementation of actions in the industrial sector that reduce carbon dioxide emissions and final energy consumption by improving energy efficiency, thereby contributing to achieving the objectives of reducing energy consumption set by Directive 2012/27/EU.

With this initiative, the Government sets a National Framework of Action for small and medium-sized Spanish companies, a sector that encompasses 99 % of the business fabric and represents almost 62 % of Gross Added Value – higher than the European average – and 66.5 % of total business employment.

2.3.3 INDUSTRY

The industrial sector must seize the opportunities arising from the ecological transition, moving towards a more circular economic model, and at the same time, anticipate and mitigate the impacts it may cause on the environment. Political commitments of this nature are reflected in sectorial documents such as the Strategic Plan of the Spanish Automotive Sector presented in February 2019, which includes sustainable and low-carbon mobility as one of the main areas of work. Likewise, the Spanish National Action Framework for Alternative Energy in Transportation, drawn up by the Government in compliance with *Directive 2014/94/EU of the European Parliament and of the Council, of 22 October 2014, on the deployment of alternative fuels infrastructure*, establishes a set of measures to achieve the objectives defined by the EU with regard to the sustainability of transport and the reduction of emissions of greenhouse gases and other pollutants.

The government continues to work actively on these measures and by the end of 2019 it will present to the EU the review report on the level of compliance with the targets.

Likewise, the Ministry of Industry, Trade and Tourism is developing, along with the main sectors, the so-called *Industrial Agendas*. These documents include the measures that each industrial sector will implement to move towards a more sustainable sector.

With regard to the situation of the sector, Spain's final energy consumption in 2017 (compared to 2016) amounted to 79.4 Mtoe, of which 23.9 % corresponded to energy consumption by industry (3.2 % more than the previous year, higher than the 1.8 % increase in total energy consumption). At the European level, industry consumption reached 25.4 % of total energy consumption in the EU-28. Spanish consumption represented 7.3 % of the overall European industry's energy consumption.

With regard to greenhouse gas emissions from industry, in 2018 there has been a 3.5 % increase with respect to the data for 2016, which is contrary to the reduction goals. Currently, it represents 18.6 % of total national emissions. Moreover, in 2018 there were 9 accidents related to the Seveso-Directive and 20 accidents in road transport that caused soil, air and water pollution. Despite these situations, the National Expenditure on Environmental Protection registered a 3.6 % growth, as the number of installations in the State Pollutant Release and Transfer Register (Spain's PRTR) grew by 29.3 % in the last decade, which shows a positive trend of environmental awareness in the sector.

2.3.3 INDUSTRY

Final energy consumption in the industrial sector

The indicator represents final energy consumption data corresponding to industry sector, excluding non-energy consumption, i.e. those products consumed by the industry as raw materials, the purpose of which is not direct production of energy.

Justification

The industry sector is, following transport, the most energy-consuming sector in Spain. To meet national and international objectives on renewable energy and energy efficiency, the industry sector faces the challenge of orienting its growth towards a model based on a decarbonized, circular and more sustainable economy with an increased use of renewable energies.

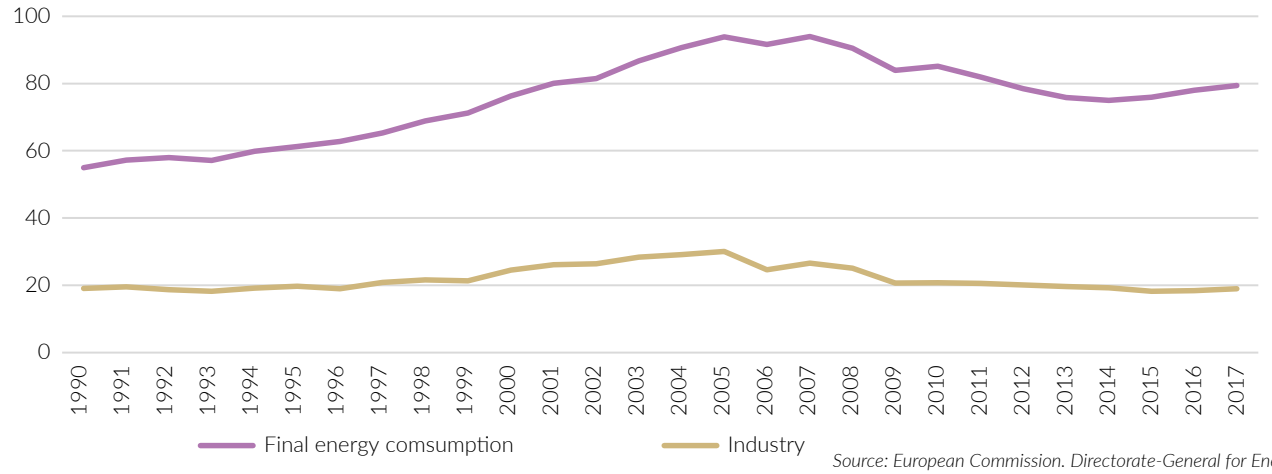
The indicator offers useful information to monitor SDG 9 (Industry, innovation and infrastructure).

Pursuant to the information available at the Directorate-General for Energy of the European Commission, the final energy consumption in Spain during 2017 (last update available) amounted to 79.4 million tonnes oil equivalent (Mtoe) which represents a 1.8 % increase with regard to the previous year. 19 Mtoe (23.9 %) of said amount correspond to energy consumption by the industry, 3.2 % more than in 2016.

A growth tendency from 2014 can be seen in the overall consumption and from 2015 in the industrial sector. The more contributing industries to the energy consumption were iron and steel, non-metallic mineral, chemical, petrochemical, food, beverages and tobacco industries; they all made up the 59.9 % of the energy consumption of the sector.

At European level, Spain represented 7.5 % of the total energy consumption of the EU in 2017; being the fifth country with higher energy consumption, following Germany, France, Italy and the United Kingdom. In the European Union, the consumption of the industry reached 25.4 % of the overall energy consumption, amounting to 7.3 % in Spain.

Final energy consumption by the industrial sector (%)



Source: European Commission. Directorate-General for Energy

Trend analysis

5-YEAR TREND	PAST YEAR TREND	OBJECTIVE	OBJECTIVE OUTLOOK
○	○	SDG 9.4 "by 2030 upgrade infrastructure and retrofit industries to make them sustainable, with increased resource use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes".	○ (Compliance of objectives will depend on the sources of energy used.)

One of the main aims of the draft Climate Change and Energy Transition Bill, pending approval, is to improve the energy efficiency in, at least, 35 % with respect to the trend scenario.

Source: Energy statistical country datasheets.
https://ec.europa.eu/energy/en/data/energy-statistical-pocketbook (updated on 03-06-2019)

2.3.3 INDUSTRY

Emission of Greenhouse Gases of the Industrial Sector

The indicator shows greenhouse gas emissions, expressed in kilotonnes (kt) of CO_2 equivalent, corresponding to the industrial sector (manufacturing industry, mineral industries (cement, lime, glass, etc.), chemical industry and metallurgical industry).

Justification

With the decarbonization of industry as one of the main challenges to be met in terms of sustainable development, it is essential to have detailed information for the analysis of the evolution of the sector.

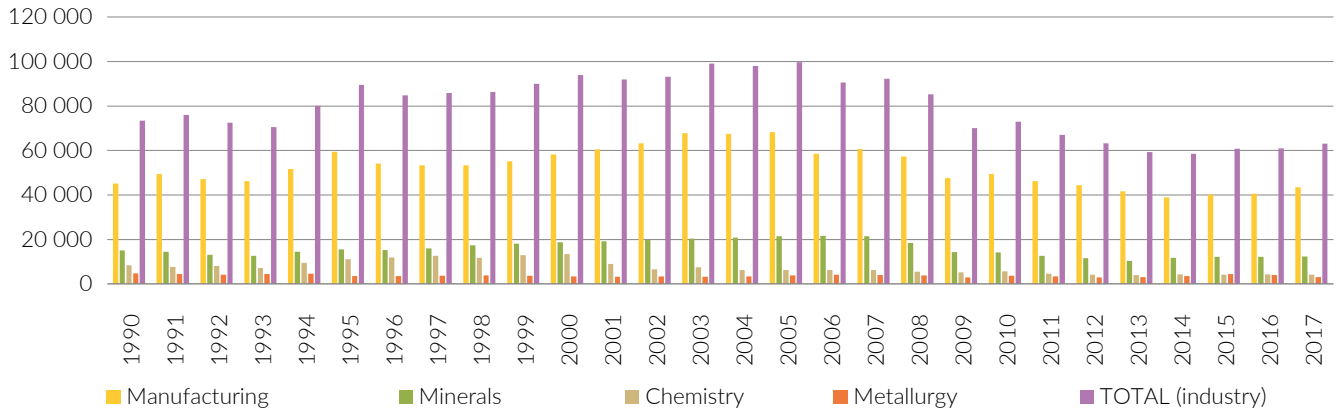
The indicator allows the monitoring of the VII EAP: Priority Objective 2 and SDG 7 (Affordable and Clean Energy)

In 2017, industrial GHG emissions reached 63,131 kilotonnes of CO_2 equivalent ($ktCO_2eq$), representing 18.6 % of the national total and a 3.5 % increase compared to 2016.

Within the sector, the manufacturing industry was the main source of emissions, representing 68.8 % of the total. It was followed the minerals industry (19.6 %), the chemical industry (6.7 %) and finally the metallurgical industry (the remaining 4.9 %). In the two main sources – manufacturing industry and mineral industry – , there were increases in relation to 2016 values: 7.1 % and 1.9 % respectively. At the same time, falls amounting to 22.7 % in emissions from the metallurgical industry and 1.2 % in the chemical industry have been recorded.

Contrary to the targets set, there has been a slight increase in emissions from this sector since 2014. This tendency change with respect to previous editions of the Environmental Profile of Spain is due to the fact that the main emission reductions have been achieved in the energy industry, which has been excluded from the calculation of the indicator this year.

GHG Emissions in the main industrial sectors (kteq CO_2)



Source: MITECO

Analysis of trend

5-YEAR TREND	PAST YEAR TREND	OBJECTIVE	OBJECTIVE OUTLOOK
○	○	7th EAP Primary Objective 2: Turn the European Union into a resource-efficient, green, and competitive low-carbon economy.	○

The Draft Climate Change and Energy Transition Bill, pending approval, targets 2030 to achieve a 20 % reduction in GHG emissions compared to 1990 and a 90 % reduction by 2050, mainly based on the promotion of renewable energies.

Source: Ministry for Ecological Transition, 2019. National Inventory of Atmospheric Pollutants. Greenhouse gas emissions. 2019 Edition. Inventoried series 1990-2017. Data provided on request by the Sub-directorate General of Air Quality and Industrial Environment of the Directorate General of Biodiversity and Environmental Quality (MITECO).

2.3.3 INDUSTRY

Expenditure on environmental protection in the industrial sector

The indicator shows the total investment in environmental protection made by the industrial sector. It is the sum of the investments made in integrated equipment and facilities that prevent pollution, as well as investments in equipment and facilities that operate independently of the production process to treat pollution.

Justification

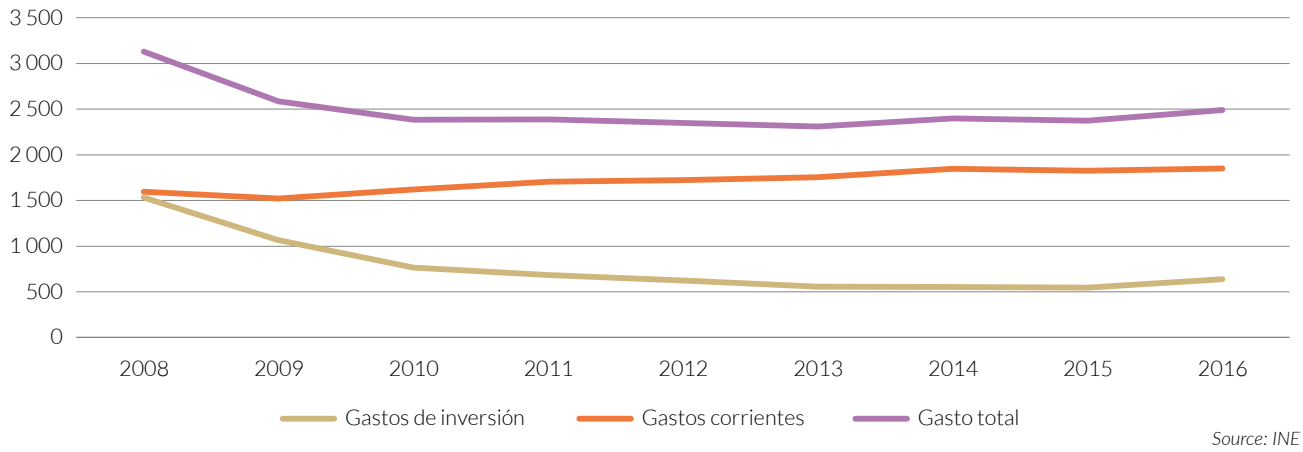
The indicator is obtained from the Survey on Industry Expenditure on Environmental Protection prepared by the INE. The Survey allows to comply with the environmental expenditure regulations set forth in Regulation (EC) No 295/2008 of the European Parliament and of the Council concerning structural business statistics, which also makes it possible to establish comparisons on an international scale. Another objective of this operation is to provide basic information for the development of the Environmental Protection Expenditure Account (EPEA), drawn up using Eurostat methodology, with regard to producers of ancillary services (own consumption) for environmental protection.

The indicator allows to monitor SDG 12 (Responsible Consumption and Production).

According to the 2017 forecast in National Expenditure on Environmental Protection, the total expenditure for that year amounted to €18,157 million, 3.6 % higher than the previous year and representing 1.6 % of GDP. Of this value, 59.2 % of expenditure was spent on activities related to waste management, followed by waste water management (18.7 %), air protection, climate, soil, radiation, noise and vibration abatement (9.5 %), environmental R&D and other activities (6.7 %) as well as the protection of biodiversity and landscape (5.8 %).

The latest available data on the environmental expenditure of industry correspond to 2016, where total expenditure amounts to € 2,490.2 million (4.9 % more than in 2015) of which 74.3 % correspond to current expenditure and the remaining 25.6 %, to investment expenditure. In 2016 there was 16.7 % more investment expenditure compared to 2015, as well as 1.4 % more current expenditure, showing a slight positive growth trend. However, in the 2008-2016 period a sharp fall of 58.3 % of total expenditure on environmental protection by industry was registered.

Expenditure on environmental protection in the industrial sector (Million €)



Source: INE

Trend analysis

5-YEAR TREND	PAST YEAR TREND	OBJECTIVE	OBJECTIVE OUTLOOK
○	○	SDG 12.6 To encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle.	○

Source: Survey on Industry Expenditure on Environmental Protection. Series 2008-2016 Instituto Nacional de Estadística. http://www.ine.es/jaxi/Tabla.htm?path=/t26/p070/p01/serie/l0/&file=01001.px&L=0

2.3.3 INDUSTRY

Road and rail accidents causing possible environmental damage

The indicator shows the number of accidents during the transport of dangerous goods by means of transport (road and rail) causing possible environmental damage.

Justification

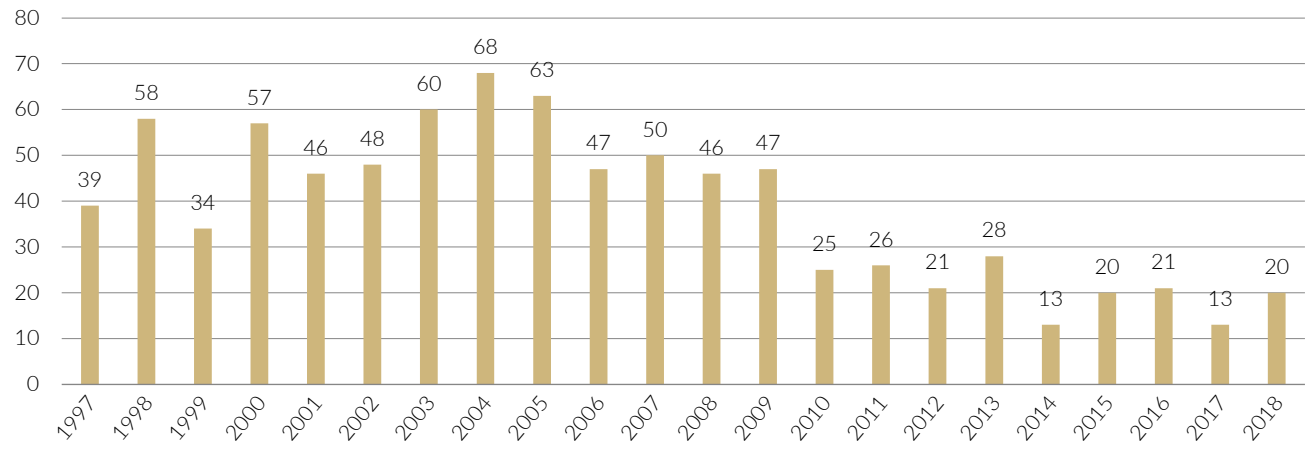
The Basic Directive for Planning Civil Protection against the risk of accidents in the Transport of Dangerous Goods by Road and Rail published by Royal Decree 387/1996, includes as a basic planning element the implementation by the Directorate-General for Civil Protection and Emergencies of the statistics of this type of emergencies at the national level.

A total of 850 accidents (types 3 to 5 described in the explanatory notes appendix involving roads and railways with possible damage to the environment were recorded between 1997 and 2018. 94.8 % of these occurred by road (806 accidents) and only 5.2 % by rail (44 accidents). There were 20 accidents in 2018 , all of them in road transport. This means that there were 8 more accidents in this type of transport compared to 2017, when 12 accidents were registered, approaching again the 2016 figures (21 accidents).

In 2018, among the 20 registered accidents, there were 23 recorded environmental affections: 2 related to air pollution, 3 to water pollution and 18 of them, to soil pollution. The main change with respect to the previous year relates to soil pollution, where the number of affections doubled: from 9 in 2017 to 18 in 2018.

In the 1997-2018 period a total of 970 environmental impacts were recorded: 75.6 % relating to soil pollution, 13.1 % to water pollution and 11.3 % to air pollution.

Accidents causing possible environmental damage during the transport of dangerous goods by road and rail. 1997-2018



Source: Directorate-General for Civil Protection and Emergencies (DGPCE), 2019

The *2017 Annual Report of Emergencies Produced during Transport of Dangerous Goods by Road and Rail*, prepared by the Directorate-General for Civil Protection and Emergencies, was published in 2018. This study focuses on the analysis of 65 accidents (types 2 to 5) of 2017 and on the comparative study for the 2008 - 2017 period.

In said 2008-2017 period, 260 of the 977 accidents (29.4 % of the total) have affected the environment. Spills generally occurred on land (218 accidents which represent 22.3 % of the total), followed by emissions to the air (43 accidents - 4.4 %) and finally into watercourses (38 accidents - 3.9 %). According to data for the period published in 2018, this trend remains constant throughout the analysed period.

Source: Data provided by the Directorate-General for Civil Protection and Emergencies. Ministry of Home Affairs.
http://www.proteccioncivil.es/riesgos/transportes/accidentes

2.3.3 INDUSTRY

Industrial accidents involving hazardous substances

The indicator shows the number of industrial accidents involving activities included within the scope of Directive 2012/18/EU (SEVESO-III), on the control of major-accident hazards involving dangerous substances.

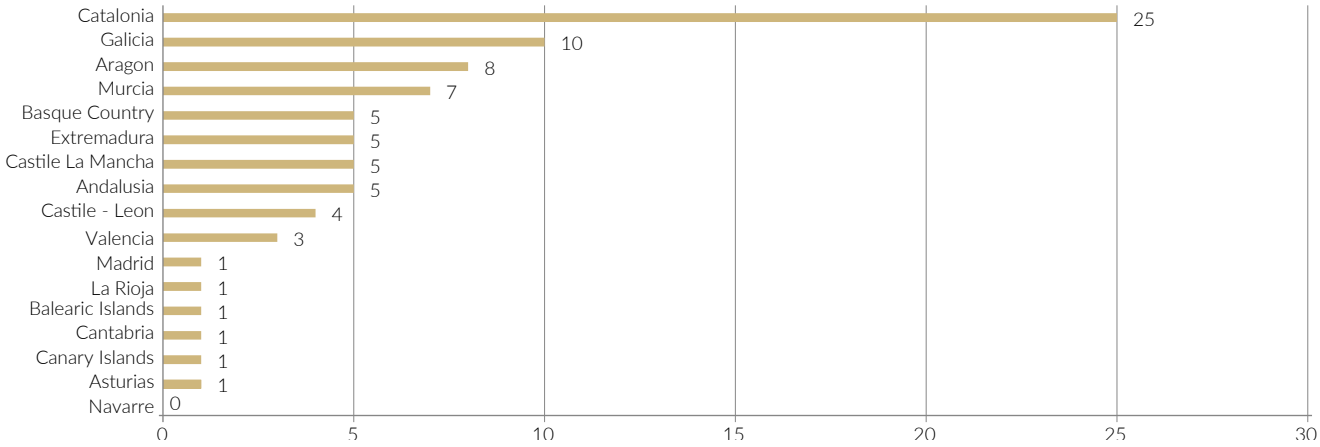
Justification

The SEVESO Directive has contributed to achieve a low frequency of major accidents. The legislation has been amended to strengthen the rights of the public, who are given access to information on the risks that could occur in nearby industrial facilities and on how to react in the event that they do.

This indicator is relevant both to inform the public of the number of this type of events and their location by Autonomus Community, as well as to monitor progress in complying with the Directive.

A total of 9 accidents in industrial activities within the scope of the SEVESO regulation were recorded during 2018. This means 5 accidents less than in 2017, which represents a reduction of 55.6 % and equals the number of accidents registered in 2016. However, even with this reduction, 2018 ranks second in terms of the number of accidents in the last 12 years.

Number of accidents in industrial activities within the scope of the SEVESO Directive 1987-2018



Source: Directorate-General for Civil Protection and Emergencies. Ministry of Home Affairs

In the 1987-2018 period, the vast majority of accidents (30.1 %) occurred in Catalonia, followed by Galicia, Aragon and the Region of Murcia. In 2018 the highest number of accidents (2) was recorded in Extremadura. In that same year and for the first time in the period analysed (1987-2018), an accident was recorded in the Principality of Asturias while the autonomous communities of Canarias, Cantabria, Castile and Leon, Madrid and the Basque Country completed thirty years without recording any accident within the scope of this Directive.

Source: Data provided by the Directorate-General for Civil Protection and Emergencies. Ministry of Home Affairs.
http://www.proteccioncivil.es/riesgos/transportes/accidentes

2.3.3 INDUSTRY

Industrial facilities with data validated in Spain's PRTR

The indicator shows the number of industrial facilities in *Spain's PRTR Pollutant Release and Transfer Register*

Justification

Spain's PRTR makes available information on emissions into the atmosphere, water and soil of polluting substances and data on waste transfers from the main industries and other specific and diffuse sources.

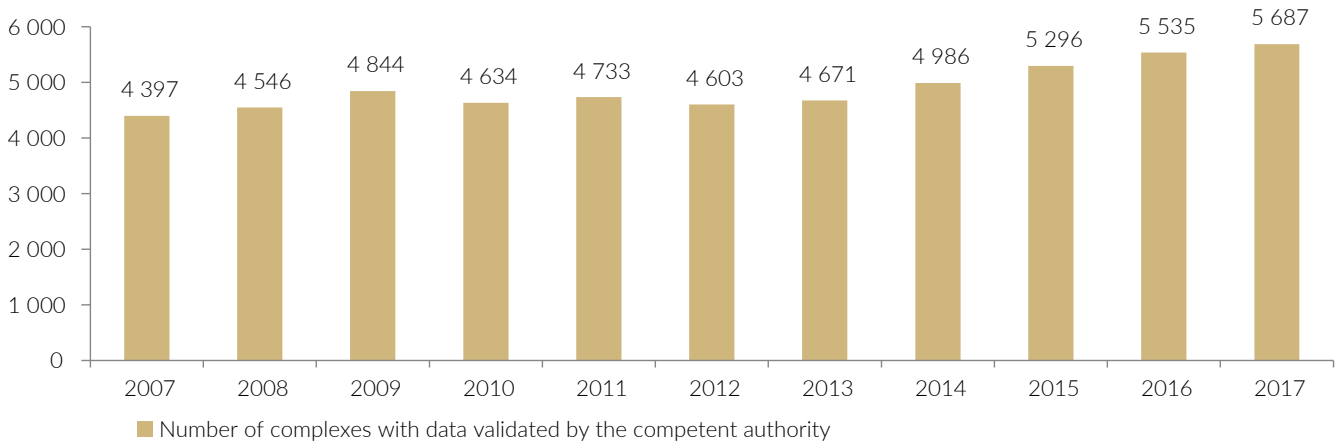
For that reason, PRTR are becoming an essential environmental information tool of significant interest for the evolution of environmental policies as well as an instrument for the integration of the different information requirements that are requested from industrial agents.

Since the entry into force of the E-PRTR Regulation, the number of facilities with validated data has increased every year: with 5,687 installations in 2017 which represents a 29.3 % growth compared to 2007. There have been only two occasional decreases during the whole period of application of the Regulation: in 2010 and 2012.

By Autonomous Community, Catalonia continues to have the highest number of registrations (1,364), followed by Aragon (769) and Castile and Leon (728). By economic activities, livestock and intensive aquaculture was the activity with the highest number of registered industries, 48.4 % of the total, followed by waste and wastewater management (13.3 %), production and processing of metals (8.3 %) and mineral industries (8.2 %).

Unlike previous years, in order to go one step further in access to environmental information, in 2018 all validated data were published, above and below public information thresholds (set forth in Annex II and article 3.1.b of Royal Decree 508/2007). Likewise, on 29 October 2018 *Order TEC/1171/2018, on regulation of information, control, monitoring and evaluation of large-scale combustion plants (LCP) was published*.

Number of complexes with validated data in the Spain's PRTR



Source: : Spain's PRTR. MITECO

In the EU - 28, by means of European Commission Decision 2018/1135, the EU-Registry, the European Register of Industrial Facilities, is in process of creation. This is a new information submission scheme that collects administrative data on industrial facilities, installations and plants with reporting obligations under the E-PRTR Regulation and the Industrial Emissions Directive.

In Spain, since 2018 and with a view on 2020, all the functionalities of Spain's PRTR are being adapted for these new tasks, in the same way, the level of information and options for searches and queries on the web page of the Spain's PRTR registry for the general public will be increased and improved.

Source: Data provided by Spain's PRTR. Sub-directorate General of Air Quality and Industrial Environment. Directorate General of Biodiversity and Environmental Quality Ministry for Ecological Transition

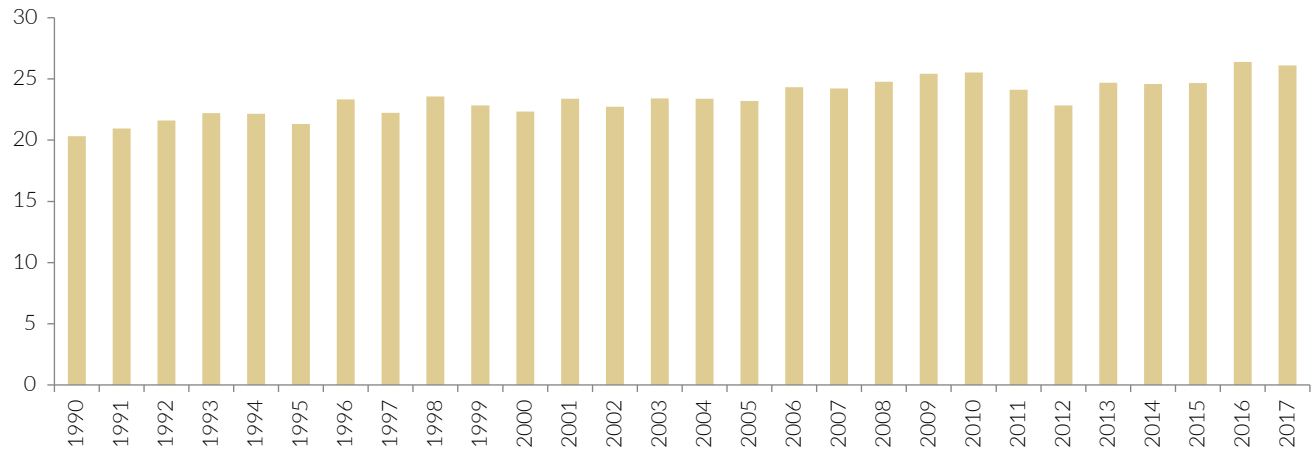
2.3.4 TRANSPORT

The trend of the transport sector in Spain continues as in recent years since the end of the crisis that began in 2007. In general terms, the scenario could be more positive, since passenger and freight traffic have increased, so have the final energy consumption of transport and polluting emissions.

The transport sector can be evaluated from three very interrelated perspectives. First, mobility and modal split must be noted, i.e. transport demand, which will determine the intensity of passenger and freight traffic. Secondly, the variable of energy consumption must be noted; it will be determined according to the transport used to meet the demand. Thirdly, efficiency and the emission of pollutants, which will depend on the energy source used and the technological features of the vehicle with regard to the reduction of certain pollutants.

Transport is the activity with the highest emission of pollutants into the atmosphere, contributing significantly to climate change. It represent the 40 % of total energy consumption.

Transport emissions as a percentage of total GHG emissions



Source: MITECO

The contribution of transport to total GHG emissions follows an increasing trend, although with annual fluctuations. In 1990 they represented 20.3 % of total emissions, against 23.1 % in 2017, the second year with the highest contribution after 2016 when they amounted to 26.4 %.

Of all polluting substances, greenhouse gas (GHG) emissions have registered the lowest decrease since 2007, with a reduction rate of around 18 %, in comparison to the reduction of acidifying substances and ozone precursors, which show decreases close to 43 % and 48 % respectively. This was an expected event, as the emission factor considered for each fuel has remained constant and no significant variations in the fuels have been used. Diesel remains the main fuel, followed by petrol. Of the total number of vehicles in circulation in 2017, 99.5 % used fossil fuels and only 0.5 % were hybrid or electric vehicles.

The European Union has proposed a number of key targets in all sectors, including transport, where 2020 and 2030 are target years. Thus, the EU Clean Energy Package, the so-called "Winter Package", announced in 2016 in a Commission Communication entitled (COM(2016) 860 final) *Clean Energy For All Europeans* that includes revisions and legislative proposals to reduce greenhouse gas emissions, to increase the proportion of renewable energy in the system and improve energy efficiency in the EU by 2030. All these targets cannot be developed without the transport sector. Moreover, the update of the roadmap towards a systematic decarbonisation of the economy introduced in November 2018 aims at achieving a carbon-neutral EU by 2050.

2.3.4 TRANSPORT

In Spain, the Draft Integrated National Energy and Climate Plan and the draft Climate Change and Energy Transition Bill are fully in line in this regard. The latter includes specifically sustainable mobility and recognises the transport sector as an important part of the response to climate change and includes, among other measures, the promotion of sustainable alternative fuels in air transport.

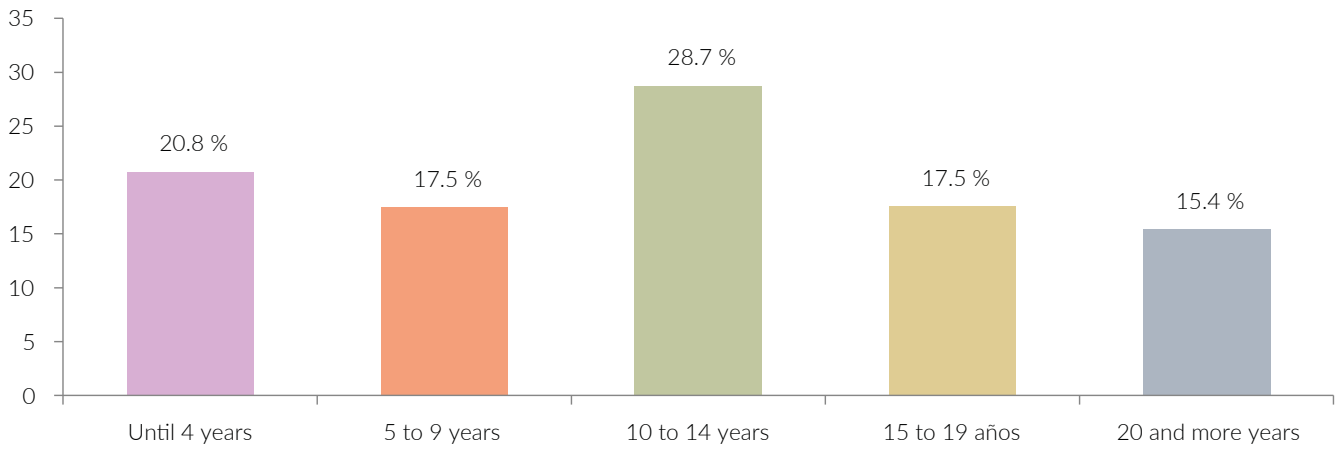
In 2017, the total amount of investment in publicly-owned transport infrastructure amounted to 7,853 million euros, of which 69.9 % corresponded to the Ministry of Public Works. This type of investment follows a downward trend since 2009, when total investment reached 22,866 million euros: 65.7 % more than in 2007. By mode of transport, most of the investments were made on road transport (46.3 %), although in the case of the Ministry of Public Works, the highest investment was made on railway (49.6 %).

In this sense, one of the possible measures to tackle the negative impacts of transport is the modal shift towards more efficient modes, such as rail. This is the most energy-efficient mode and, in freight transport, it is five times more efficient than road transport.

The desired reduction in atmospheric pollutant emissions has not yet been achieved, despite the improvement in the efficiency of vehicle engines, which translates into a reduction in specific fuel consumption, the improvement in fuel specifications, the systems for reducing pollutants in exhaust gases through selective catalytic reduction for nitrogen oxides, particle filters, etc., and the slow but progressive increase in alternative fuels.

This is partly due to the fact that Spain's vehicle fleet is older than average. In 2017, the vehicle fleet reached 32,929,004 vehicles, including trucks and vans, buses, passenger cars, motorcycles, industrial tractors, trailers and semi-trailers and other vehicles. There is an increasing trend in the vehicle fleet, with a 6.3 % increase in the last 10 years and 2.6 % in the last year.

Age of vehicles in Spain (%). Year 2017.
Total number of vehicles: 23,500,401



Source: DGT

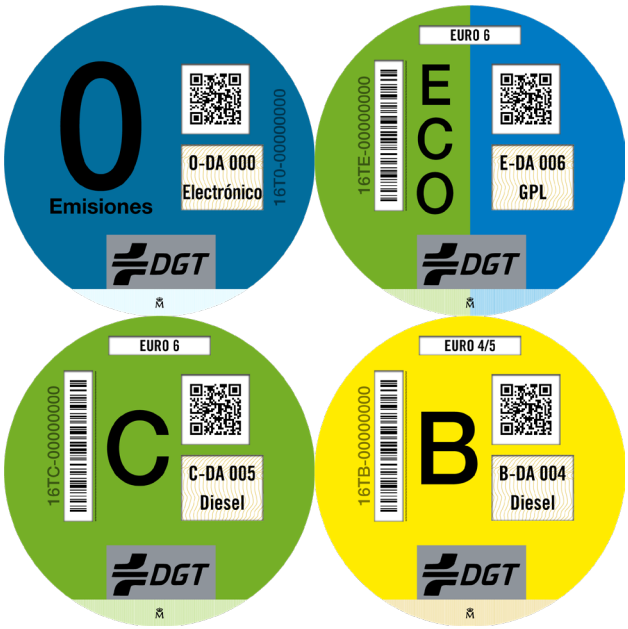
Cars represented 71.4 % of the total vehicle fleet in 2017. Among them, the majority were 10 to 14 years old (28.7 %); 15.5 % were more than 20 years old; 17.5 % were 15 to 19 years old; 17.5 % were 5 to 9 years old and the remaining 20.8 % were less than 4 years old.

Public administrations are implementing measures to improve efficiency in the transport sector, such as the promotion of less polluting public and private transport systems. The *Plan Nacional de Calidad del Aire y Protección de la Atmósfera 2013-2016* (National Plan for Air Quality and Protection of the Atmosphere 2013–2016), widely known as the AIRE plan, already considered vehicles as the main source of nitrogen dioxide emissions in cities. In this sense, a classification of the vehicle fleet was carried out to favour the most environmentally friendly cars and those vehicles that incorporate new technologies through tax or mobility benefits. Aire Plan II, for 2017-2019, which will be followed

2.3.4 TRANSPORT

by the National Atmospheric Pollution Control Plan for the period 2019-2022, offers continuity for air quality improvement regulations. This last planning instrument recognises the transport sector as one of the most important to be considered. In fact, it incorporates a package of specific emission reduction measures for road, rail, air and maritime transport.

Within this framework, four environmental labels for vehicles have been implemented according to their emissions. These four labels, ranked from lowest to highest degree of pollution, are: Zero emissions, ECO, C and B. Each vehicle falls into one or another category depending on whether they are electric, hybrid or diesel and petrol vehicles and according to their year of registration. Among other functions, these labels will enable administrations to adopt traffic regulation measures in specific areas of cities or when pollution scenarios are declared.



The website of the *Dirección General de Tráfico* (Directorate-General for Traffic) defines the objective of the classification of the fleet as "*to positively discriminate the more environmentally-friendly vehicles and become a useful instrument for municipal policies, both with regard to the restriction of traffic in severe air pollution, and to promote new technologies by means of tax benefits or benefits relating to mobility and environment***".**

In addition to the direct effects of transport on the environment relating to emissions and energy consumption, there are also other indirect effects, such as the generation of waste from vehicles (used lubricating oils, tyres, batteries, end-of-life vehicles, etc.). Managing this waste requires its own regulation that determines the obligations of the producer, generators and holders and the waste managers, as well as prevention measures, reuse, recycling, recovery, storage and disposal, along with management systems and the applicable sanctioning regime.

The number of accidents is another negative externality in the transport sector. There were 102,233 fatal accidents in Spain during 2017, only 0.1 % less than in the previous year. By type of road, urban roads amounted to 63.3 % of accidents while the remaining 36.7 % corresponded to interurban roads. The total number of deaths in 2017 was 1 830, a figure unfortunately higher than in 2016.

Changes introduced in our country with regard to road safety in recent years have led to a stagnation in the number of fatalities, with continuous declines to reach the minimum of the historical series with 1,680 deaths in 2013. However, it is necessary to continue implementing measures and policies in this area in order to try to reduce these figures. In this sense, an example of this type of action is the recent reduction of the speed limit on conventional roads, in which cars can circulate at a maximum speed of 90 km/h.

2.3.4 TRANSPORT

EU Directive 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources includes measures to encourage on-going development of advanced fuels and to reduce greenhouse gas emissions, such as an obligation for Member States to require fuel suppliers to have a minimum quota of advanced biofuels and certain types of biogas. The European Commission assesses the greenhouse gas performance, technical innovation and sustainability of these fuels.

With regard to intelligent transport, it is important to enhance the development and deployment of electric mobility in road transport as well as to boost the integration of advanced technologies into innovative railways.

Electric mobility is expected to be a substantial part of renewable energies in the transport sector by 2030 at the latest. To this end, given the rapid evolution of electric mobility and the potential of this sector in terms of growth and employment for the European Union, incentives should be increased. Likewise, it is necessary to explore other options to meet the demand for electricity in the transport sector from renewable energy sources.

2.3.4 TRANSPORT

Demand for inter-city passenger and freight

This indicator shows the annual pattern in the demand for domestic passenger transport, measured in passenger-kilometre (p-km) and freight, measured in tonnes-kilometre (tkm).

The distribution by means of transport is also included (road, rail, sea and pipeline transport), relating to both the domestic passenger transport (p-km) and to domestic freight transport (t-km).

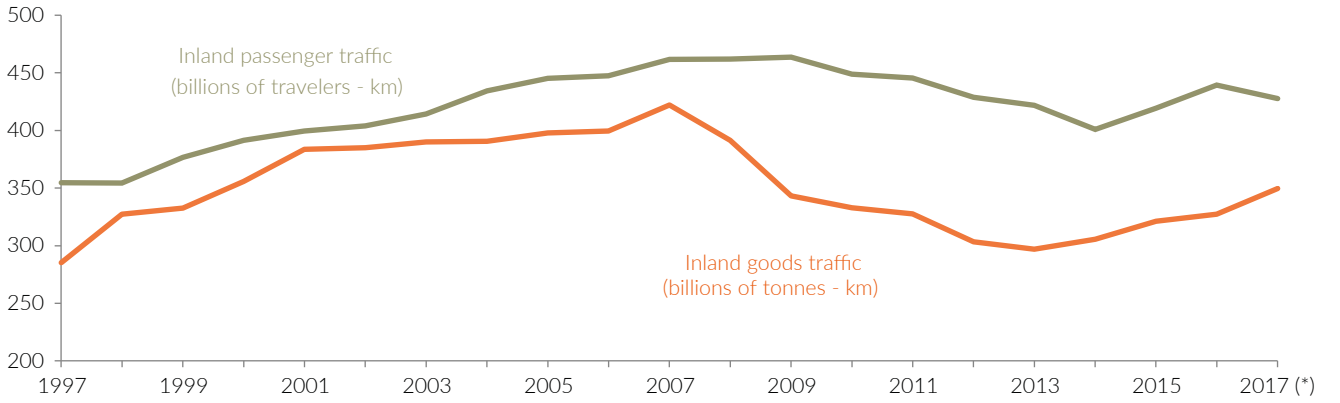
Justification

The current demand for mobility requires a complex transport system that adapts to their needs which, apart from guaranteeing the movement of passenger and freight in a safe and economically efficient manner, must minimise the impact on the environment and progress towards a sustainable scheme.

This indicator is useful to assess the different international objectives: SDG 7, 9 and 11 and priority objectives 2, 7 and 8 of the 7th Environment Action Programme (EAP) of the EU.

In 2017, domestic passenger traffic has slightly decreased (3.7 %) in road transport. However, the rest of modes of transport have increased in the last year: 2.7 % (rail), 6.4 % (air) and 5.2 % (maritime). Furthermore, with regard to domestic freight transport, road transport has experienced the sharpest upturn: 10.1 %. Maritime and air transport have also increased (7.7 and 6.3 % respectively) while rail and pipeline transport have slightly decreased.

Total volume of inter-city transport



(*) Provisional data
Source: Ministry of Public Works (Ministerio de Fomento)

With regard to the modal split of the overall number of domestic transport, road transport continued as the mode preferred by passengers, amounting to 86.2 % and 78.9 % of the total number of passengers and freights, respectively, transported in Spain during 2017. In passenger transport, following road, air transport was the most used mode (7 %) followed by rail (6.6 %).

Domestic freight transport shows different results, where ships (14.1 %) was the most used means following road transport. Maritime transport was followed by rail (3.3 %) and plane (less than 0.1 %) of the total transported tonne-kilometre in Spain in the last year. Pipeline transport also stands out, as it represented 3.7 % of the total transported freight in 2017 in the National Network, between oil and gas pipelines.

The 2012-2024 Plan de Infraestructuras, Transporte y Vivienda (Infrastructure, Transport and Housing Plan) (PITVI) includes improvements in intermodality and connectivity, with special focus on access to ports and peri-urban areas.

Source: Transport and infrastructures. Annual Report 2017. Ministry of Public Works (Ministerio de Fomento)
Consult at: https://apps.fomento.gob.es/CVP/handlers/pdfhandler.ashx?idpub=BTW036
Annual Statistical Report, 2017 Chapter 16. Transport via pipeline Ministry of Public Works (Ministerio de Fomento)
Consult at: https://www.fomento.gob.es/recursos_mfom/paginabasica/recursos/16transptuberia_17.pdf

2.3.4 TRANSPORT

Emissions of air pollutants from transport

The indicator shows aggregated pollutant emissions into the atmosphere originating from domestic transport in Spain, presented as an index in which the value of year 1990 = 100. Aggregate emissions of greenhouse gases (GHG), acidifying and eutrophying substances and ozone precursors are presented.

Justification

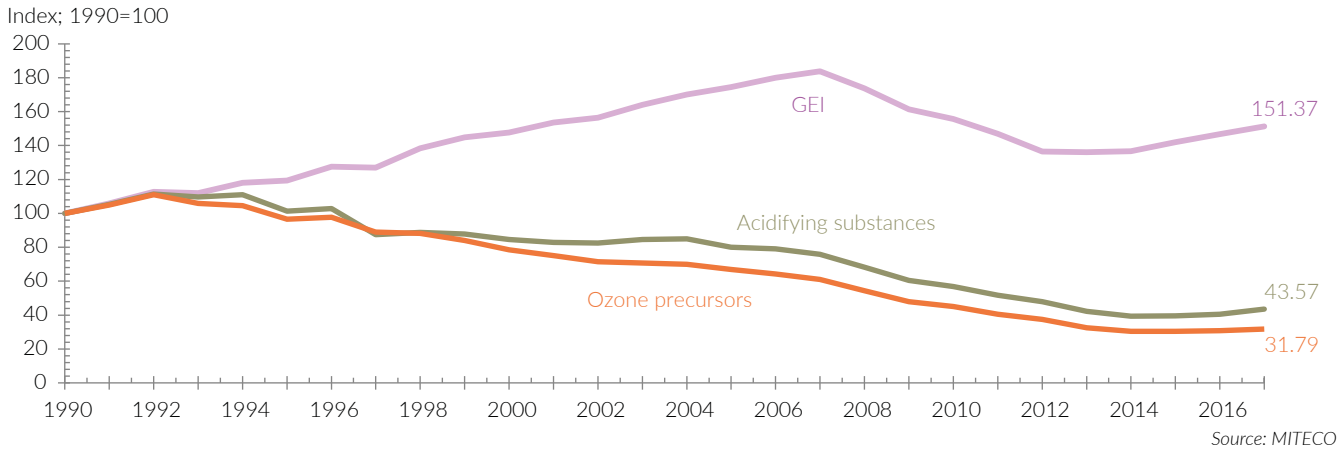
The transport sector is the only one that has not significantly reduced its greenhouse gas emissions in the EU since 1990. For this reason and due to its high growth rate, it is one of the main sectors to be addressed to achieve international objectives: objectives 7, 9 and 11 of the SDG and priority objectives 1, 2 and 3 of the EU's 7th EAP.

In 2017 greenhouse gas emissions into the atmosphere from national transport amounted to 88 784.5 kt CO_2 equivalent. This represents 26.1 % of total GHG emissions into the atmosphere from all sectors of activity in Spain.

The total amount of GHG emissions into the atmosphere in 2017 has increased by 3.1 % with respect to the previous year. This increase is similar to the one observed in the last 3 years. In the last 10 years (2008-2017), GHG emissions into the atmosphere from transport have been reduced by 12.8 % as a result of the reduction experienced from the maximum value of 2007 to 2013 (coinciding with the economic crisis), the renewal of the vehicle fleet and the improvements implemented in the different modes of transport. Nevertheless, these improvements do not fully compensate for the increase in emissions due to the increase in demand.

Acidifying substances and ozone precursors have also increased (7.5 % and 3.2 % respectively) this year. This growth is relevant as, since 1992, when the maximum value was recorded, emissions of these substances have been progressively reduced or increased with very small increases, around less than half of the increase experienced this year.

GHG emissions, acidifying and tropospheric ozone precursors from transport



Source: MITECO

The increase of the greenhouse gas emission from 2014 is in line with the increases of economic activity registered in this same period, as well as with the increase of the demand for transport and energy consumption in the sector.

Source: Ministry for Ecological Transition, 2019. National Inventory of Atmospheric Pollutants. 2019 Edition. Inventoried series 1990-2017. Data provided on request by the Sub-directorate General of Air Quality and Industrial Environment of the Directorate General of Biodiversity and Environmental Quality (MITECO).

2.3.4 TRANSPORT

Passenger vehicle fleet by fuel type

The indicator describes the number and proportion of passenger vehicles that make up the passenger vehicle fleet based on the fuel type used by the engine (diesel cycle, gasoil or petrol), hybrid (combustion and electric) and electric engines.

Justification

Technological advances have led to a clear evolution of passenger cars, offering more sustainable alternatives to traditional fuels and promoting a necessary transition in the sector.

Within the SDG, the indicator is used to assess objectives 7, 9 and 11, as well as priority objective 2 of the 7th EAP of the EU.

In 2017 the total passenger car fleet amounted to 22 950 565 vehicles, of which more than 99 % used fossil fuels, 119 087 were hybrid vehicles of different types (0.5 %) and 6 383 electric vehicles (0.03 %).

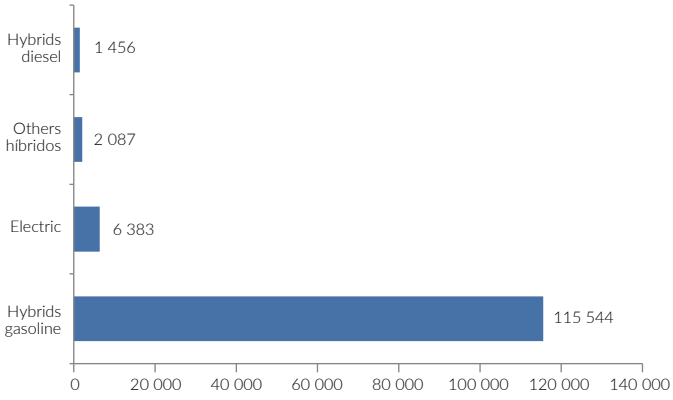
The total growth in the number of passenger cars (petrol, diesel and natural gas) over the last year has been less than 1 %. By fuel type, diesel vehicles corresponded to 57.3 % and petrol vehicles, to the remaining 42.7 % of all fossil fuel vehicles, while gas-powered passenger cars represented only 0.004 %. Although both diesel and petrol vehicles have increased in the last year, the trend over the last ten years shows a 21.2 % increase of diesel vehicles and a decrease of petrol vehicles close to 14.1 %.

There has been a significant increase in the number of hybrid and electric cars, reaching 119 087 in 2017, a 5.5 % increase with respect to 2016. This is seen in the number of electric vehicles in 2017: a total of 6 383 vehicles, 3.1 % higher than the previous year.

This trend evidences that, although the percentage of fossil fuel vehicles is maintained, the number of vehicles using alternative energy sources follows a slow but steady upwards trend. Figures show that, in comparison to 2014, the percentage of hybrid vehicles has increased by 47.8 % and that of electric vehicles has increased by 42.1 %.

Car fleet according to type of engine (Millions of vehicles)

Hybrid and electric car fleet. Year 2017



Source: MITECO

Liquid biofuels with fossil fuels are the most used renewable energy source in this sector. The production of liquid biofuels has significantly increased in Europe, mainly with regard to biodiesel, as a result of the need to reach the 2020 binding target of using a 10 % of renewable energy in the sector.

Source: Ministry for Ecological Transition, 2019. National Inventory of Atmospheric Pollutants. 2019 Edition. Inventoried series 1990-2017. Data provided on request by the Sub-directorate General of Air Quality and Industrial Environment of the Directorate General of Biodiversity and Environmental Quality (MITECO).

2.3.4 TRANSPORT

Final energy consumption of transport

The indicator presents the final energy consumption of domestic transport.

Justification

Transport is largest of the energy-consuming sectors in Spain, reaching 40 % of the national total where cars represent approximately 15 % of all final energy consumed. To mitigate the effects of the sector on climate change, it is crucial to implement and increase sustainable energy sources.

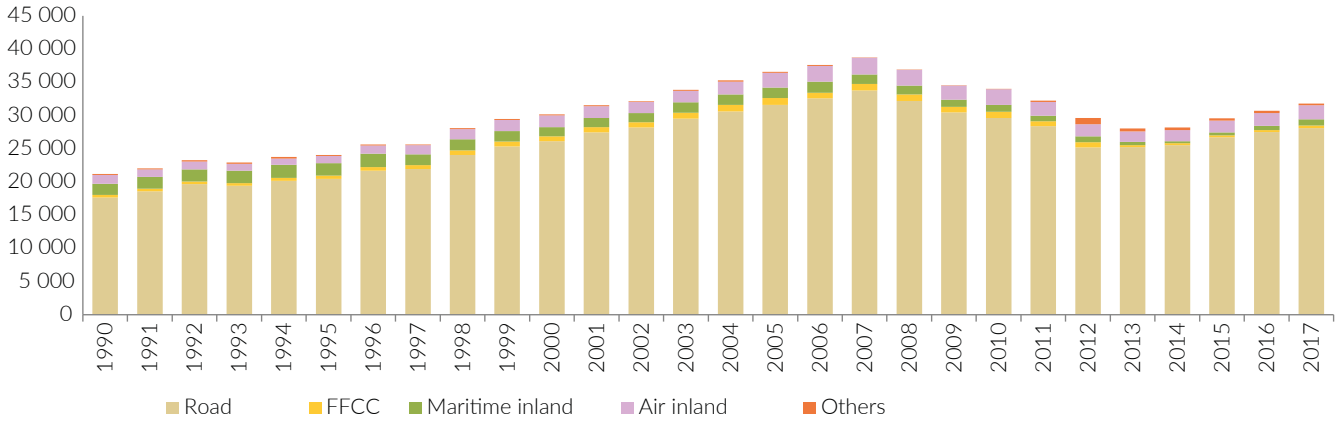
Within the SDG, this indicator is used to evaluate objectives 7 and 9, as well as priority objectives 2, 7 and 8 of the7th EAP of the EU.

In 2017, final transport energy consumption amounted to 31 794.16 kilotonnes of oil equivalent (ktoe): 3.5 % higher than in the previous year and 5 % higher than in 2010. The 2017 figure follows the upward trend registered since 2014, with the recovery from the economic crisis that began in 2007.

There is an increase in energy consumption in all of the modes of transport, where inland maritime transport registered the highest increase (52.3 %), followed by rail transport (27.6% in respect of the previous year). Energy consumption in other modes of transport increased to a lesser extent, with figures of 8.7 % and 2.1 % for international air transport and road transport respectively.

The energy sources considered are: oil products, gases, renewable energies and electrical energy. Oil products were the most demanded source (93.5 % of the total). Among them, diesel was the main source (75.2 %), followed by petrol (15.9 %), kerosene (7.1 %), fuel oil (1.6 %) and finally, liquefied petroleum gases (0.2 %).

Final energy consumption of transport (ktoe)



Source: Institute for Energy Diversification and Conservation (IDAE). MITECO

The European Union aims to ensure, by 2020, that 20 % of the energy consumed comes from renewable sources, as well as achieving a 20 % reduction in primary energy consumption compared to projected levels by improving energy efficiency.

The trends observed in recent years seem to suggest that the targets set for 2020 (European Council of 8 and 9 March 2007) will not be achieved. The improvements adopted to achieve efficiency in transport do not seem to be sufficient to cope with energy consumption, which continues to grow and at a higher rate than the forecasts made during the preparation of the priority objectives.

Source: Institute for Diversification and Energy Saving (IDAE), 2019. "Final Energy Balances (1990-2017)". Consult at: IDAE/Información y publicaciones/estudios-informes y estadísticas/BALANCES ENERGÉTICOS/Balances de energía final (1990-2017) http://sieeweb.idae.es/consumofinal/bal.asp?txt=Transporte&tipbal=s&rep=1

2.3.4 TRANSPORT

Environmental efficiency of transport in terms of GVA, demand, emissions to the atmosphere and final energy consumption

The indicator covers several selected transport variables for the purposes of comparing their evolution with that of the Gross Value Added (GVA) of the sector, and to thus evaluate its trends and correlations between them so as to estimate the relative efficiency of certain aspects with respect to others (environmental, financial, etc.).

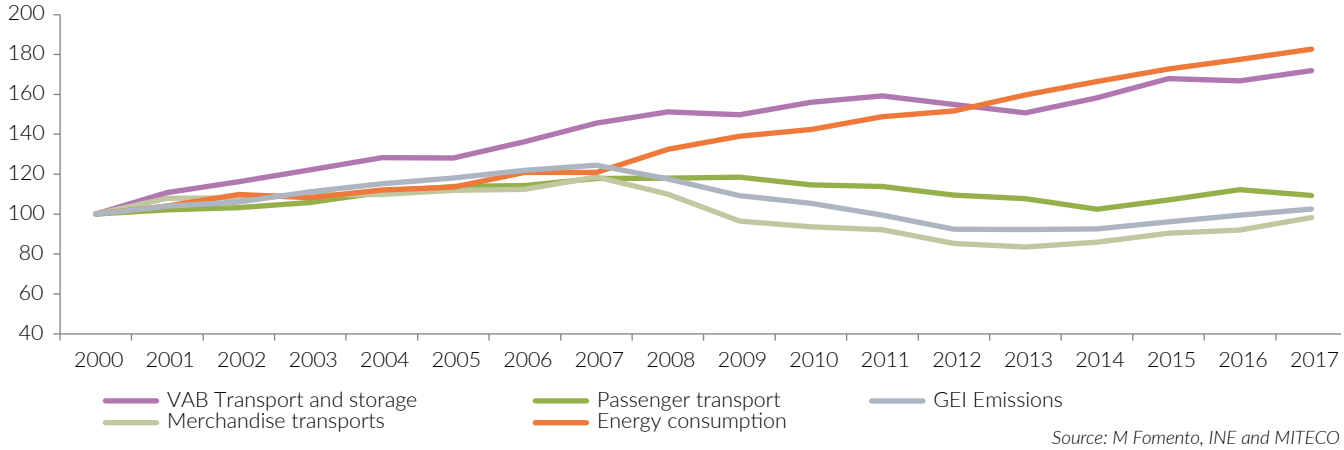
Justification

The indicator allows to compare the evolution of different variables of the sector in relation to their Gross Added Value. In this way, it is possible to check whether the pressures caused by it are disassociated from economic growth.

In 2017, the Gross Added Value (GVA) at current prices in Spain amounted to 1 057 467 million euros, where transport sector represented 4.5 % (47 931 million euros). Land and pipeline transport represented around 50 %, compared to 2 % of maritime and inland waterways transport and 6 % air transport. The remaining 42 % originated in warehousing and ancillary activities to transport and postal activities.

Although certain improvements have been introduced in the sector – such as the use of alternative energies to fossil fuels or the shift to more efficient modes of transport – the trends of recent years show a wide margin for improvement in transport efficiency, with the exception of passenger transport, where a 2.7 % drop in demand was registered (mainly due to the 3.7 % drop in road passengers). The economic growth of the sector has been accompanied by an increase in the demand for freight and passenger transport and energy consumption, consequently increasing GHG emissions into the atmosphere.

Main transport variables: Passenger and cargo transport, energy consumption, GHG and VAB emissions (Index 2000=100)



Source: M Fomento, INE and MITECO

The European Commission and the European Investment Bank have launched a financial instrument of the European Environment Foundation for sustainable and efficient transport-related projects to achieve the objectives of transport mobility, decarbonisation and digitalization that contribute to improving efficiency in the so-called "Transport Blending Facility" sector.

Moreover, to achieve the proposed energy efficiency objectives, the European Commission has created a specific working group on energy efficiency, in addition to the new renewable energy auctions planned in several Member States such as France, the Netherlands and Portugal and the wider use of corporate energy purchase agreements.

Source:

- Ministry for Ecological Transition, 2019. National Inventory of Atmospheric Pollutants. 2019 Edition. Inventoried series 1990-2017. Data provided on request by the Sub-directorate General of Air Quality and Industrial Environment of the Directorate General of Biodiversity and Environmental Quality. Ministry for Ecological Transition
- Transport and infrastructures. Annual Report 2017. Ministry of Public Works. Consult at: https://apps.fomento.gob.es/CVP/handlers/pdfhandler.ashx?idpub=BTW036
- Annual Statistical Report, 2017 Chapter 16. Transport via pipeline Ministry of Public Works. Consult at: https://www.fomento.gob.es/recursos_mfom/paginabasica/recursos/16transptuberia_17.pdf
- National Statistics Institute. Gross Value Added by branches of activity. Consult at: http://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica_P&cid=1254735576581

2.3.5 URBAN ENVIRONMENT

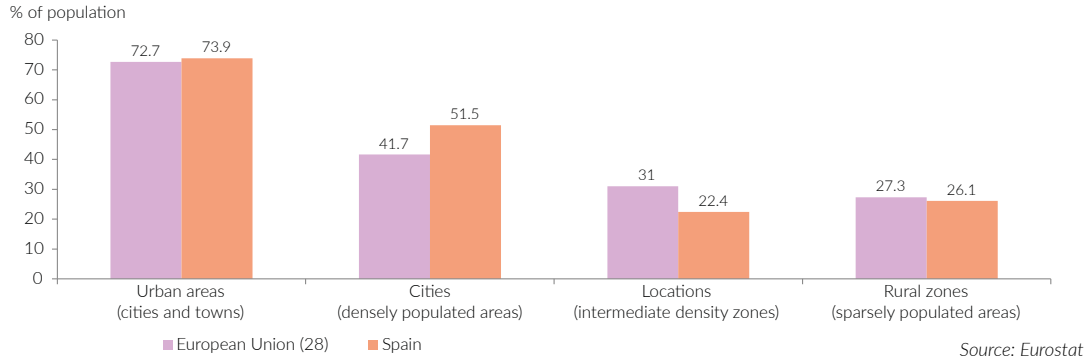
According to the United Nations Organization, 68.4 % of the world population is projected to live in urban areas by 2050, a threshold that will be exceeded in the most developed areas, where it is projected to reach 86 %. According to said organisation, by mid-century, urban population will be 88 % of the total population in Spain. All this involves facing multiple global challenges for sustainability, which will differ depending on the size of the urban area considered, as well as of its regional context.

By 2018, the urban global population stood at 55.3 % and, as for Spain, data came close to 80 %. Specifically, the population in Spanish municipalities of more than 10,000 inhabitants (considered to be urban) reached 37.2 million, comprising a surface of only 19.2 % of the national territory. In the Spanish context, there are many threats to the sustainability of our cities, including the ageing of their inhabitants, new models of urbanisation (low density, zoning by use and a significant use of private vehicles, etc.), which alter the model of the Mediterranean city, inequality and social exclusion, the impact of climate change, energy management, the increase in rental housing prices, the over-saturation of tourism in some of the central districts, etc.

As for the recent evolution of the urban phenomenon in Spain, according to Eurostat, between 2014-2018 the population in mainly urban areas increased by 0.6 points, reaching 63.2 % of inhabitants, with an increasing concentration of population and economic activities in towns and cities, all of which has important effects on sustainability. In contrast, the so-called intermediate regions, with 33.4 % of population, experienced reductions, decreasing by 0.4 points. Said decrease was more moderate in predominantly rural areas, with 3.4 % of inhabitants, with a 0.1 % decrease. This process leads to major territorial imbalances, such as the depopulation of rural areas (the so-called *empty Spain*) and high population increase in urban areas, especially the biggest ones.

In 2018, 40 % of the Spanish population was living in the 63 urban municipalities of over 100,000 inhabitants, which accounted for 3 % of the Spanish surface. Six municipalities exceeded 500,000 inhabitants, but concentrated more than 16 % of the population, in only 0.5 % of the national territory. Beyond municipal boundaries, as set out by the Ministry of Development in its report *Urban Areas in Spain 2018*, one of the relevant actors in the process of transformation of the Spanish population system were the 20 large Spanish urban areas, with population increases between 1981 and 2017 of 32 %, from 24.4 to 32.2 million inhabitants.

Distribution of population per degree of urbanization in the EU-28 and Spain, per categories in 2017



Source: Eurostat

According to Eurostat, the distribution of the population in Spain for 2017, considering the degree of urbanization and the categories defined by said body, was as follows:

- **Cities (densely populated areas) accounted for 51.5 % of the Spanish population.**
- **Intermediate density areas were home to 22.4 % of the inhabitants.**
- **In rural areas (sparsely populated areas) the proportion of the population came up to 26.1 %.**

According to Eurostat, an urban area is an aggregate comprising cities (densely populated areas), as well as towns and suburbs (intermediate density). These urban areas agglutinate 73.9 % of the population in Spain, more than one point above the EU28 average.

2.3.5 URBAN ENVIRONMENT

In order to tackle the various problems, needs and challenges of the Spanish urban environment, the Urban Agenda Strategy, promoted by the Council of Ministers, has been implemented in Spain. This document, known as Spanish Urban Agenda 2019, is a strategic document for guiding the urban policies, which has no regulatory nature and is voluntary as for the adoption of commitments between Public Administrations and stakeholders. Furthermore, it is in line with the commitments made by Spain through Agenda 2030, which is the reference document, and to which it seeks to contribute by fulfilling the Sustainable Development Goal (SDG), especially number 11 (Make cities and human settlements inclusive, safe, resilient and sustainable), with the new United Nations Urban Agenda, and with the Urban Agenda for the European Union.

The Spanish Urban Agenda 2019 offers a list of ten first-level goals, related to the strategic framework subjects.

1. **Order the territory and provide the rational use of soil, conserve it and protect it.**
2. **Avoid urban sprawl and revitalize the existing city.**
3. **Prevent and reduce the effects of climate change, and improve resilience.**
4. **Sustainable management of resources, and promote the circular economy.**
5. **Encourage proximity and sustainable mobility.**
6. **Foster social cohesion and search for equity.**
7. **Promote and encourage urban economy.**
8. **Guarantee access to housing.**
9. **Lead and promote digital innovation.**
10. **Improve the intervention and governance instruments.**

As discussed above, the *Spanish Urban Agenda 2019* is also linked to the other urban agendas in the international arena approved these last years. On the one hand, there is the so-called *Urban EU Agenda*, which was born in the Amsterdam Pact and was approved in the Informal Meeting of Ministers for Urban Development of the EU (2016). The *Urban Agenda for the EU* includes three goals: improving community regulation, with special focus on having a direct impact on urban areas (better regulation), more effective design, subject to simpler management, of EU funding instruments (better regulation) and, finally, the promotion of knowledge exchange (better knowledge). Its aim is to foster growth, habitability and innovation in European cities and towns, as well as to successfully identify and tackle social challenges.

On the other hand, the Spanish Urban Agenda is linked to the *Quito Declaration on Sustainable Cities and Human Settlements for All*, endorsed in 2016, known as the *UN Urban Agenda*. The United Nations Conference on Housing and Sustainable Urban Development (Habitat III) identified new challenges and aims at strengthening global political commitment as its first goal, therefore contributing to a sustainable urban development, through the approval of a new urban agenda, in which the parameters for 21st century cities are defined.

There is a direct link between the new urban agenda and the 2030 Agenda, as it is also the case with the *European Urban agenda* and the *Spanish Urban Agenda*, as all of them have their origin in 2015; that year, the UN adopted the 2030 Agenda on Sustainable Development. Specifically, of the 17 Sustainable Development Goals set out by Agenda 2030, it is SDG 11 (Sustainable Cities and Communities), which pursues more inclusive, safe, resilient and sustainable cities. It must be noted that the United Nations forecasts that, by 2030, 60.4% of the global population is concentrated in cities, and as for Spain, 83.3% will be urban population. It must be added that, in our country, the implementation and compliance with the Agenda 2030 is a State policy.

Within this context, according to the SDG ranking, included in the *2019 Sustainable Development Report*, part of the Network of Solutions for Sustainable Development, Spain ranks 21 out of 162 countries in terms of compliance with the SDG, with a value of 77.8 over 100. Specifically, in relation to the level of compliance with SDG 11, Spain is in a more advanced position, 18 out of 162 countries, obtaining an overall value of 89.1 points out of 100, the range of nations that are in an intermediate situation in terms of compliance with SDG 11; that is to say, where there are still

2.3.5 URBAN ENVIRONMENT

significant challenges to reach the objective. Regarding last year's report, there is a positive trend towards a moderate increase in the goal's progress. This report sets out, too, the situation and evolution of four indicators in the SDG 11, whose outcome for Spain are as follows:

- Average annual concentration of particles of less than 2.5 diameter microns (PM2.5) (µg/m³), whose goal in the indicator has been reached (value 9.7) and, therefore, this year said goal has been achieved.
- Access to clean running water (% of the urban population having access to it), with a value of 99.9 %. As in the case above, this goal has been reached.
- Level of satisfaction of public transport (%), for which a value of 65 over 100 was achieved. The report sets out important challenges for improvement. The value of this indicator has decreased if compared to the previous year.
- Percentage of the population living in household where the total cost of the "household" accounts for more than 40 % of their disposable income. This stands at 17.4. Out of the analysed urban indicators, this is the one requiring more efforts for improvement.

The European Union has implemented many resources to foster urban sustainability. Proof of this is the receipt of financing for the development of Sustainable and Integrated Urban Development Strategies (EDUSI) by Spanish cities and urban areas during the current 2014-2020 planning period of the European Union. 1 billion in aid from the European Regional Development Fund (ERDF), included in the EU's Cohesion Policy, has been allocated to implement these Strategies in our country. Until 2018, there have been three calls for the selection of EDUSI in Spain, with a total of 173 selected strategies.

Another example of funding for sustainability in the urban environment is the mobility actions implemented by the European Commission, through DG Mobility and Transport, such as the European Mobility Week (EMS), which has been held every year since 2002. Specifically, in 2018 it adopted the action "Mix and move" to promote the idea of choosing different ways of transport between different urban areas, also coinciding with the "Year of Multi-modality" of the European Commission. 2,792 European cities participated, of which 473 were Spanish cities. The number of cities with permanent measures was 1278, and Spain's contribution was 333. 8,847 permanent measures were presented across Europe, with 2,520 from Spanish cities. Finally, a total of 731 *Mobility actions* or good European practices, were submitted, with 144 Spanish ones.

Also, in 2018, the EU has announced multiple awards to encourage cities' commitment to sustainability Awards for Sustainable Urban Mobility Plans (ASUMP), European Green Capital Awards or the SEM awards.

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Enhancement of mobility requires having alternative transport systems available, such as the use of bicycles, and/or walking. It also requires promoting urban public transport, which must become an alternative to the use of private vehicles.

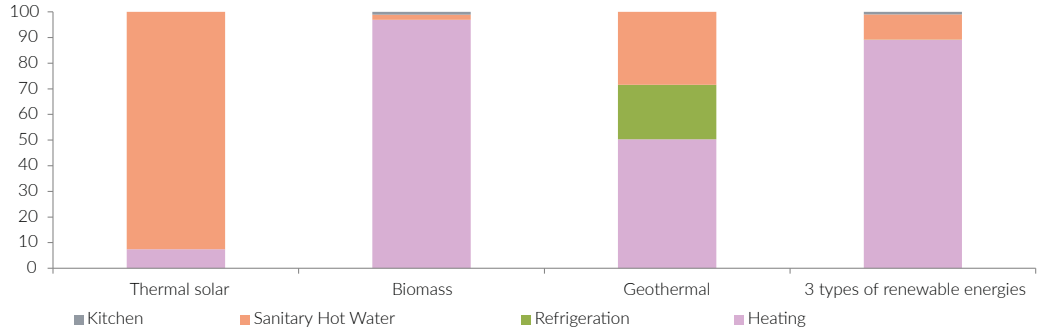
In relation to the main indicators of Spanish households in 2018 and according to INE data, from the Continuous Household Survey, these show a positive trend, at least in relation to the total number of households registered, which was over 18.5 million, representing an increase of 0.3% as compared to the previous year, and in the average size of households, which stood at 2.5 persons, with a year-on-year increase of 0.4 %.

Other data likely to help to take an X-ray of homes in our country, show an increase in the number of people living alone aged 65 and above, with more than 2 million households in this situation, which represents 11 % of the total, with an increase of 3.9 %, over 2017. Single-parent families, with the father or mother alone with their children, have grown too, and reached 1.9 million, and a 2 % variation. The rate of young people aged 25-29 and living with their parents has also risen, reaching 53.1 % in 2018, 4.6 points higher than in 2013.

Likewise, and based on the data from the Living Conditions Survey, 2016 shows a positive trend in average annual income, with an increase of 3.1 % in relation to 2015, standing at 27,558 Euros/person. Also, according to the INE, in 2017 the rate of people living in households with low work density went down (0 to 59 years old), with decreases standing at 12.8 %.

An interesting fact set out by the INE with Eurostat data is the low level of awareness of the environmental problems for Spanish households. Thus, in 2017, households reporting pollution problems, dirt or other environmental problems in the nineteen Euro zone countries accounted for 15.1 %, while in Spain this figure stood at only 8.2 %. Similarly, there was a decrease of 0.6 and 1.9 points respectively, as compared to 2016. Finally, regarding resource consumption, according to INE data for 2016, the average consumption of water continues to rise, and stands at 136 litres per inhabitant and day, with a growth with a 3 % growth compared to 2014 data.

Percentage of total renewable energy consumption per use type: residential/households sector. 2016.



Source: IDAE/MITE

The total final renewable consumption per use type in the Spanish residential/household sector stood in 2016 at 2,738.6 kilotons of oil equivalent (ktoe), which accounted for 18 % of the households energy consumption.

Biomass is the most consumed renewable energy, with 91.1 %, followed by solar, with 8.5 %, and finally, geothermal is only 0.4 %. By use, renewable energy is mostly used in households for heating, with 89.1 %, while 9.9 % is used for domestic hot water. Kitchens consume only 1 % of renewable energy, and its use for refrigeration is almost residual, with only 0.1 %.

2.3.5 URBAN ENVIRONMENT

Urban density by autonomous community/city

This indicator represents data on urban population density, both in Spain and in the autonomous territories.

Justification

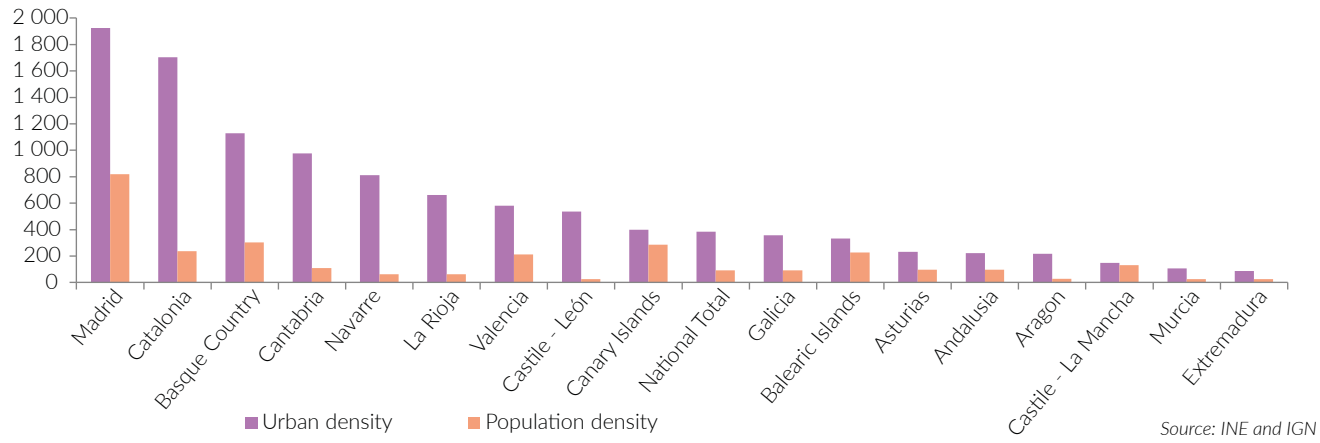
The indicator makes it possible to measure urban pressure in the territory and helps to analyse appropriate urban densities, linked to a sustainable urban balance.

With the latest data available in Eurostat, the important weight of the Spanish urban population is confirmed. Considering the degree of urbanization, in 2017, 51.5 % of the Spanish population was mainly concentrated in cities (densely populated areas), almost 10 points above the EU-28 average (41.7 %). If intermediate density areas were added to these, a total of 73.9 % of the population would be located in the so-called Spanish urban areas (densely populated and intermediate areas), a figure which was also higher than the EU-28 average of 72.7 %.

As of 1 January 2018 the population of Spain reached 46,722.980 inhabitants (151 thousand more than in 2017), with an average population density of 92.4 ha/km², and a slight increase in the number of inhabitants of 0.3 % with respect to the previous year. The Balearic Islands and Madrid were the autonomous communities with the highest year-on-year relative population growth, with 1.16 % and 1.09 % respectively, compared to Castile-Leon, which experienced a decrease of 0.69 %, followed by Asturias and Extremadura, each losing 0.65 %.

In 2018, of the total population of Spain, 79.6 % lived in municipalities with more than 10,000 inhabitants, considered urban for the present indicator, with an average urban density of 383.8 inhab/km².

Urban density in the autonomous communities: inhabitants in municipalities >10000/km² and population density. Year 2018



Source: INE and IGN

The autonomous communities having the highest urban density were Madrid, with 1,925.1 inhab/km², followed by Catalonia, with 1,702.6 inhab/km² and the Basque Country, with 1,129.2 inhab/km²; however, the cities of Ceuta and Melilla were the ones with the top urban density, exceeding 5,000 inhab/km², and, therefore, those with the highest population pressure on their territory. The regions of Murcia, Castile-La Mancha and Extremadura were, for their part, those with the lowest urban density, with values of 148, 107 and 86.4 inhab/km², respectively.

All this shows an evident significant urban-rural territorial imbalance in Spain, with consequences for sustainability (problems in the provision of urban services, urban models of mobility, etc..) Finally, the differences that persist between the different typologies of the Spanish urban scenario in relation to size, density and urban concentration, and also functionality, are noted.

Source:

- INE, Official population figures of the Municipal Register of Inhabitants as reviewed on 1 January. Summary by autonomous community. Population per autonomous community and city, and size of municipalities.
  Available at: http://www.ine.es/jaxiT3/Tabla.htm?t=2915
- IGN, Ministry for Development. Geographical Classification of Municipalities and Population entities.
  Available at: http://centrodedescargas.cnig.es/CentroDescargas/catalogo.do?Serie=NGMEN

2.3.5 URBAN ENVIRONMENT

Urban public transport

This indicator exclusively shows data on urban passenger transport, such being understood as transport that runs entirely on urban or potentially urban land or is used to connect different urban areas within the same municipality.

Justification

The indicator measures the evolution in the use of the public transport network in our cities. It is used to measure sustainable urban mobility in terms of use of public transport by the population.

This indicator is useful to assess goal 11.2 of the SDG, and to monitor key goal 8 of the 8th EAP of the EU.

On the basis of INE data, in 2018 a total of 4,906 million travellers used public transport in all its modalities, including urban transport (subway and bus), interurban, special and occasional transport services. 63 % of them used urban transport for their trips, reaching a total of 3,014 million passengers. 58.7 % chose the bus, and 41.3 % chose to use the subway. Overall, there has been a positive year-on-year variation in urban transport, with a growth in the number of passengers of 2.7 % compared to 2017.

The intensive and growing use of urban public transport that is being observed is contributing to sustainable urban mobility in cities, together with the gradual increase in other forms of mobility (bicycles, scooters, etc.), and all this despite of the large number of trips made in private car.

Thus, the number of urban bus passengers increased in 2018, by 2.1 % compared to 2017. This increase occurred in all the autonomous communities, save for Extremadura and Madrid, where it decreased by 2.6 % and 1.1 %. The communities that emerged with the greatest relative increase in the number of passengers on urban buses were the Region of Murcia, Andalusia and the Canary Islands, with increases of 3.7 %, 3.5 % and 3.4 %, respectively. In addition, in the seven cities with a subway service (Barcelona, Bilbao, Madrid, Malaga, Palma, Seville and Valencia) there was also an increase in passengers in the last year, which stands at 4.6 %. Again this year, all cities have experienced an inter annual increase, with Palma and Malaga ranking first, with a 21 % and 9.7 % variation and 5.7 % in Seville.

Urban public transport 2000-2018 (in thousands of travellers)

Source: INE

The *2019 Sustainable Development Report*, which is part of the Sustainable Development Solutions Network, carries out monitoring of the level of compliance with SDG 11 (Sustainable cities and communities). This report indicates, on the basis of Gallup data (2019), that the level of satisfaction with public transport in Spain reaches 65 points out of 100, which translates into the need to tackle important challenges for the fulfilment of objectives, with, at the same time, detecting a setback in the trend of this indicator.

Source: INE, Transport of Passengers Statistics. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736167628&menu=resultados&idp=1254735576581

2.3.5 URBAN ENVIRONMENT

Final energy consumption in households.

This indicator shows the final energy consumption made by the residential sector in Spain.

Justification

This indicator is used to measure the sustainability of energy used by households.

It contributes to monitoring of key goal 2 of the 8th EAP of the EU (to turn the Union into a resource-efficient, green, and competitive low-carbon economy).

According to data from the Institute for Diversification and Savings of Energy (IDAE), final energy consumption in Spain in 2017 was 84,263 kilotons of oil equivalent (ktoe), 2.3 % higher than in the previous year. Spanish households also increased their use of final energy by 1.3 %, compared to the previous year, which is equivalent to 18.1 % of the final total energy use. Such an increase is mainly due to the contribution of the use of gas, which went up by 7.6 %, and, to a lesser extent, of renewable energy (0.7 % increase), of electric energy (0.5 %) and, finally, carbon (a slight increase of 0.3 %). On the other hand, the use of final oil products went down by 4.1 %.

As for final energy sources in the residential sector, in 2017 the final amount of energy used in Spain was 15,277 ktoe and mostly came from electricity (39.4 %), followed by natural gas (24.5%), renewable energies (18.3 %) and oil products (17.3 %). Consumption of carbon was only 0.5 %. As for renewable energies, biomass was the most used, and diesel and liquefied gas ranked first among oil products.

Correspondingly, the *Annual report for energy consumption (2010-2016)* issued by the IDAE analysed the total consumption of final energy per type of use in the residential/household sector. Thus, in 2016 43.1 % of the final energy used in households was for heating, followed by lighting and domestic appliances purposes (28.9 %) and of hot sanitary water (19.1 %). Kitchen accounted for 7.9 %, while the consumption for cooling only accounted for 0.9 %.

Structure of energy demand of households /residential sector per source of energy. (% energy consumption)

Source: IDAE

According to the National Statistics Institute (INE), using Eurostat data, in the 2016 ranking of the final energy consumption of households per capita (consumption of electricity and heat per inhabitant, excluding transport), Spain appeared in the bottom of the range, specifically in position number 25, only above Bulgaria, Portugal and Malta, with a consumption of 324 kg of oil equivalent, below the EU average, with 558 kg, and well below the country with the highest consumption, Finland, with 963 kg of oil equivalent.

Source:

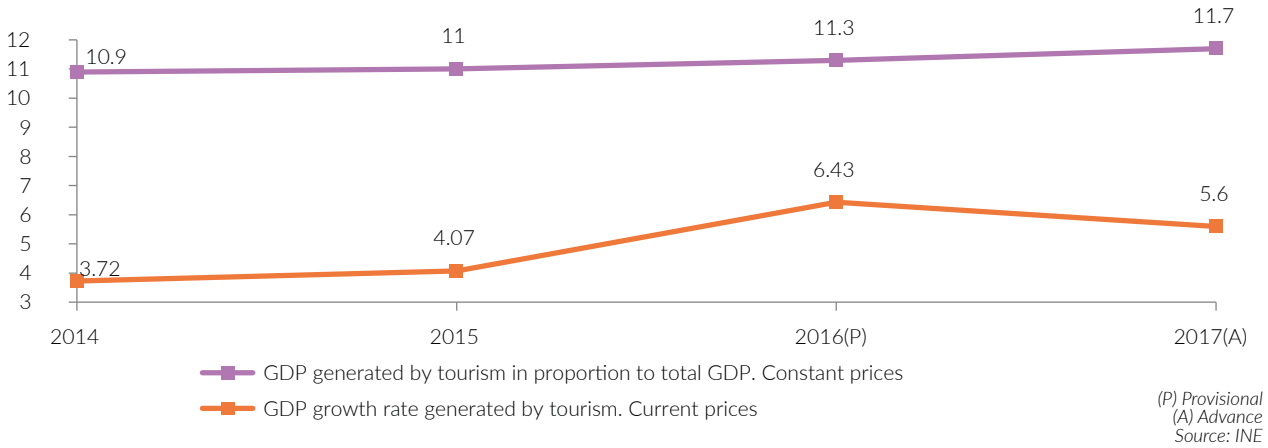
- IDAE, Ministry for Ecological Transition. Final consumption of energy. Balance of final consumption of energy. Available at http://sieeweb.idae.es/consumofinal/bal.asp?txt=2017&tipbal=t
- IDAE, Ministry for Ecological Transition. Studies, reports and statistics. Consumption for use and energies of the residential sector (2010-2016). Available at https://www.idae.es/estudios-informes-y-estadisticas

2.3.6 TOURISM

According to the World Tourism Organization (WTO), tourism is one of the main global industries, and accounts for one tenth of the world's GDP and employment. Spain is, in this context, a global leader in tourism competitiveness, as set out by organisations such as the Global Economic Forum in its Tourism Competitiveness Index of 2015 and 2017. Also, according to the latest WTO data, in 2017 Spain was already the second country in the world, both in terms of arrival of international tourists, with 81.9 million, only after France, climbing one position with respect to 2016, and of generated income, with 68.1 thousand million dollars from these visits, only after the USA, staying at the same position as in 2016. However, there is a certain change of trend, with a slowdown in the increase of arrivals of international tourists (in 2018 it only increased by 1.1 %). Between 2013 and 2017, there were major year-on-year increases in the number of foreign tourists, over 5 % and even 10 % in 2016.

However, the data published by the INE in 2017 evidenced the good behaviour of tourism in terms of Gross Domestic Product (GDP) and employment. According to the Satellite Account of Tourism in Spain (INE), GDP measured by the tourist final demand reached 137,020 million euros in 2017. It accounts for 11.7 % of the Spanish GDP, one tenth more than in 2016. Additionally, the importance of tourism to GDP has increased by 0.8 points since 2014, from 10.9 to 11.7 %. The 2014-2017 period also involved a full recovery phase, with a positive year-on-year increase rate, with GDP increases over 3.5 %, even 6.4 % in 2016; however, a slight decrease is found in the period 2016-2017. We should keep in mind that the 2012-2013 period, in the middle of the economic downturn, negative year-on-year GDP rates were registered, but the tourism sector has shown an important resilience.

GDP directly generated by tourism as part of total GDP and the growth rate



(P) Provisional
(A) Advance
Source: INE

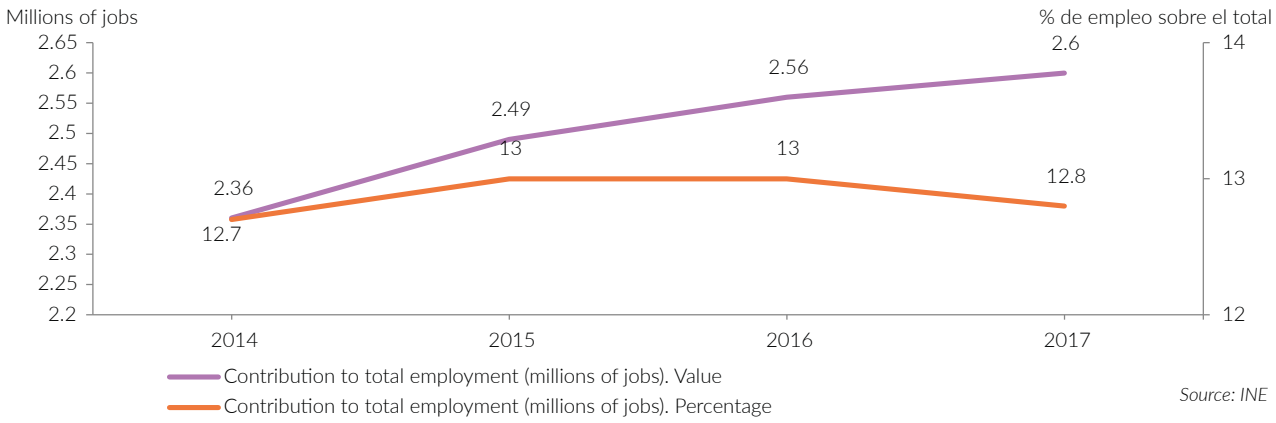
By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products is target 8.9 of Goal 8 of Agenda 2030 for Sustainable Development. Indicator 8.9.1, collected by INE in Spain, measures the GDP generated directly by tourism as of total GDP and the growth rate, with positive values so far.

In terms of employment, in 2017 tourism-related sectors reached 2.6 million jobs, according to the same Satellite Account of Tourism in Spain, figure that accounts for 12.8 % of total employment in Spain. Although there is a continuous increase in employment in tourism, which for the period 2014-2017 accounted for more than 10 %, the importance of tourism employment to total employment has grown in this period by only one tenth.

In 2018, based on data from Social Security Affiliates linked to tourism (Turespaña), the sector accounted for 12.2 % of the total affiliates in the national economy, with a total of 2.4 million people being registered as employees.

2.3.6 TOURISM

Contribution of tourism to employment. Spain 2014-2017



Source: INE

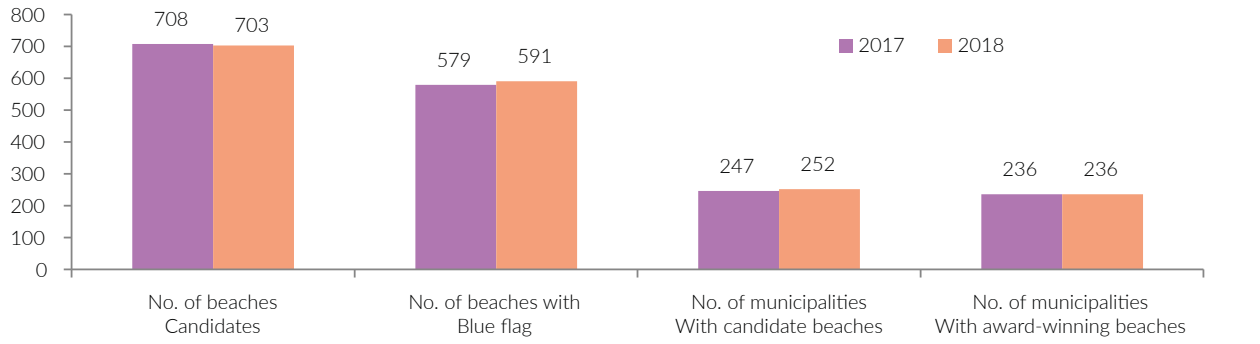
Employment in the tourism sector has grown steadily in the period 2014-2017, with an important contribution to total employment in Spain, which in this period accounted for 12.9 %.

There are many tourist products and attractions that Spain offers to visitors, as pointed out by Turespaña, among other entities, as well as motivations of tourists who come to the country, which are subject to important changes: nature active tourism, gastro-tourism, night-life, urban tourism, coastal tourism, rural destinations, itineraries, shopping, *wellness*, business tourism and language tourism. Likewise, the growing sub-sector of cultural tourism, linked to the country's important heritage in art and culture (2018 was declared the European Year of Cultural Heritage), provides an opportunity for its tourism value and the development of a sustainable tourism category.

All this diversification helps to tackle the high seasonality in the consumption of the Spanish tourist offer, focused also since the 60s on sun and beach tourism, and especially during summer months, all of which causes temporary employment and income for workers, as set out by agencies such as the WTO. Spain continues to be leader in the tourism sector, but it now shows certain signs of slowdown, as shown by the lower growth in the number of international tourists, and the recovery of other coastal Mediterranean tourist destinations, such as, for example, Turkey, which in 2017 had an international tourist growth of 24.1 %, according to UNWTO data, although they had reached negative figures in 2016.

In any case, this coastal tourism, in order to maintain its attractiveness and competitiveness, is also committed to quality and sustainability, with initiatives such as the recognition of beaches with Blue Flags (in 2018 591 beaches had this distinction) or with the Q Tourism Quality (281 beaches certified until 2018) and the certification of other services that seek to improve the quality of products, services and tourist facilities.

Blue Flag Beaches in 2017 and 2018 in Spain.



Source: ADEAC

Blue flags.

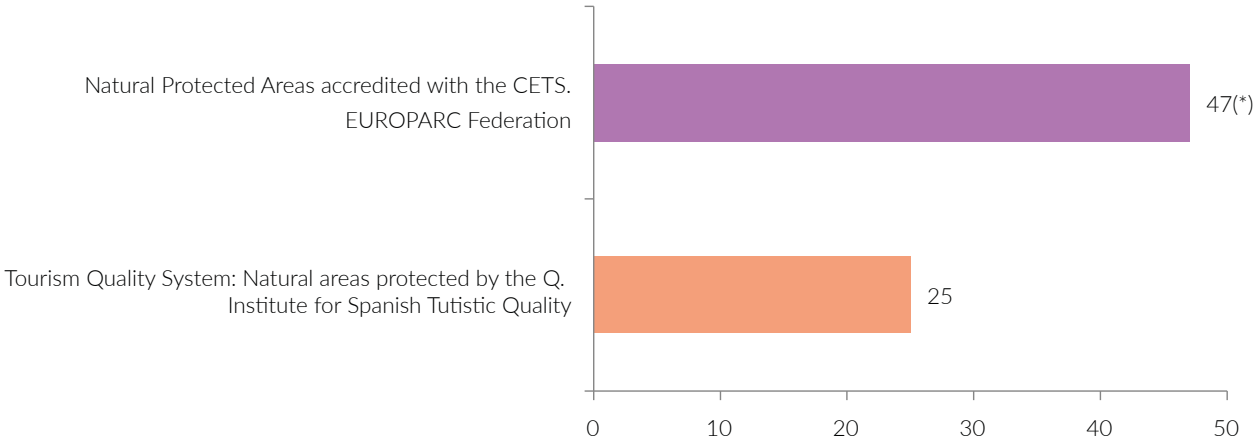
20 % of Spanish beaches were candidates to be awarded the Blue flag distinctive. 17 % of the beaches received the distinction.

2.3.6 TOURISM

The Q Tourism Quality guarantee mark, a prestigious Spanish emblem aimed at the voluntary certification of Hotels and Tourist Apartments, etc.., awarded by the Spanish Institute of Tourist Quality, contributes to positioning the country, in the search for a tourist profile that demands services and products of greater added value, guaranteeing the sustainable development of coastal tourist destinations, excessively exposed to urban pressure and tourist saturation. This initiative is aligned to the *UN 2030 Agenda on Sustainable Development*.

Other examples of the implementation of these tourist quality systems are those linked to the sustainability of the activities or facilities of Protected Natural Spaces (PNS), such as the European Charter for Sustainable Tourism (ECST) of the European Federation EUROPARC, aimed at promoting the development of tourism in terms of sustainability in Europe's protected natural spaces, and the Q for Tourism Quality, as a tool for managing the public use of Protected Natural Spaces granted by the Spanish Institute for Tourism Quality (ICTE).

ENP accredited with European Charter on Sustainable Tourism (ECST) and certified with the Q for Quality Tourism. Until 2018



(*) 27 pending renewal procedure

Source: Institute for Tourism Quality and Europarc

In 2015, during the United Nations Summit on Sustainable Development, the Agenda 2030 for Sustainable Development was adopted, as well as the 17 Sustainable Development Goals (SDG); the 169 targets are the framework for the new global development agenda in coming years, to face the challenges of climate change, inequality, or extreme poverty and to cover the three dimensions of sustainable development: economic growth, social inclusion and environmental protection. The tourism sector contributes, directly or indirectly, to the achievement of all the objectives, but according to the UNWTO, three are especially affected by this sector: goals 8, 12 and 14, related to inclusive and sustainable economic development, sustainable consumption and production, and the sustainable use of oceans and marine resources.

Specifically, as set out by goal 8: "To promote sustainable, inclusive and stable economic growth, full, productive employment and decent jobs for everyone". Tourism contribution to employment creation is mentioned in goal 8.9: "By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products".

2.3.6 TOURISM

Goal 12 is "To ensure sustainable consumption and production patterns" From this perspective, tourism must implement sustainable consumption and production patterns. Target 12.b sets out: "Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products".

Finally, goal 14 is aimed at "Conserving and sustainably using the oceans, seas and marine resources" Coastal tourism is one of the largest tourist segments, and it is essential to preserve marine ecosystems in a sustainable manner.

In relation to the above, and in the Spanish context, in 2019 the General Guidelines were presented. They will structure the future Sustainable Tourism Strategy of Spain 2030 to contribute to the achievement of the SDG of the United Nations 2030 Agenda. The goal of the new Sustainable Tourism Strategy of Spain 2030, "*is to lay the foundations for the transformation of Spanish tourism towards a model of sustained and sustainable growth that allows it to maintain its position of world leadership.*". This pattern is supported by three elements: *"the improvement of the competitive capacity and profitability of the industry, the differential natural and cultural values of destinations, and the equitable distribution of the benefits and burdens of tourism".*

Of the five axes proposed in the future Strategy, the second (on sustainable growth) proposes tourism as an economic and social engine and a lever for sustainable development of the territory, contributing to containing the depopulation of the rural environment and its consequent deterioration, redistributing prosperity and wealth, protecting and promoting the heritage and the natural environment, and improving the quality of citizens' life. Technology is presented as an instrument for changing the Spanish tourism model towards a more sustainable one. To promote the balanced development of tourism (products and experiences that contribute to diversifying products and consolidating inland tourism), sustainability as a brand value of Spanish tourism (conservation of natural, heritage and cultural values, circular economy, environmental protection and clean energies), to seek the sustainability of demand (diversification of demand, attraction of new markets/segments, new products and digitalisation), and to reduce the negative externalities of tourism activity (balance between the common interest of the society with the legitimate interests of destinations and companies).

The economic and social importance of this sector, and the need to integrate environmental and sustainability aspects in its development is clear. More than 82.8 million international tourists visited us in 2018 (1.1 % more than the previous year) and accounted for an average of 1.77 international tourists per inhabitant, a figure higher than the 1.22 international tourists per inhabitant reached ten years ago in 2009. Their main destination were our coastal areas, for a total 72.5 million international tourists (87.6% of the total). In this sense, by converting this tourist mass into the daily number of people that would be equivalent to the resident population, we obtain the figure that we have called

2.3.6 TOURISM

Tourist Population Equivalent (PTE). In 2018, the island of Mallorca stands out, as it registered 45.5 million overnight stays in hotels and was the destination with the highest PTE (124.7 thousand people/day).

Promotion of tourism activities in disadvantaged areas is a tool for avoiding depopulation of our land. Rural tourism contributes to that end, and is one of the main economic drivers in certain areas. It has to do with enjoying activities in nature; one of the main ones are visits to national parks. In 2018, the number of visitors to Spanish national parks was 15.2 million, or 39.5 visitors per hectare. It is surprising how the Canary national parks, with 8.5 % of the surface of all the national parks, received more than 50 % of the visits (232 visitors per hectare). 2018 was a positive year for rural tourism, with growths in the number of tourists and overnight stays by 5 and 3.4 %, respectively.

In 2018, 13.5 % of jobs in the tourist sectors were classified as sustainable jobs, exceeding the 10.8 % forecast for 2008, which is undoubtedly a positive message for this sector.

2.3.6 TOURISM

International tourists per inhabitant

Ratio between the number of international visitors and population, at national and autonomous community level.

Justification

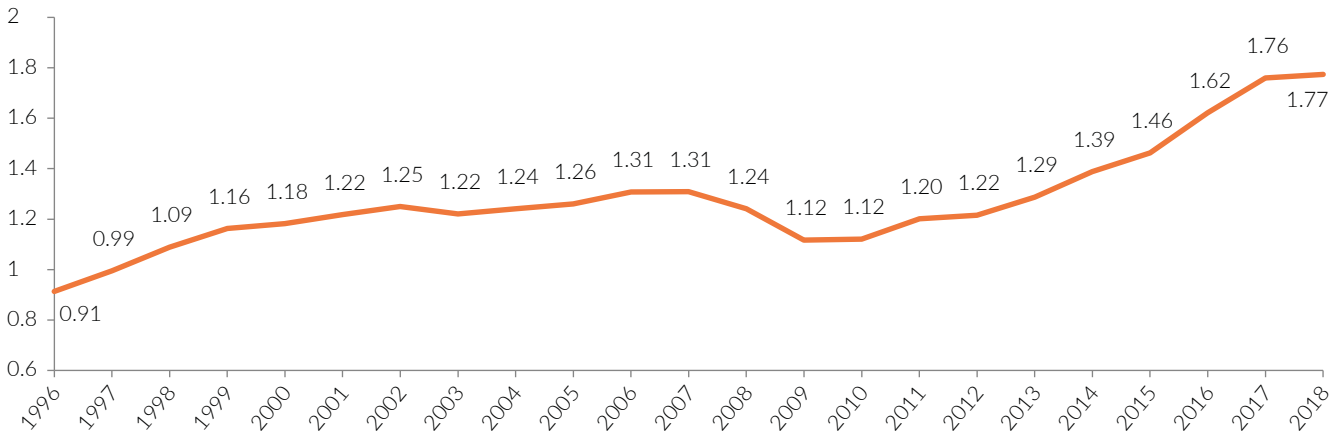
The indicator compares the number of international tourists to Spain's population. It is used to determine the pressure of tourism on destinations, as one of the negative external factors of tourism, which have an impact on residents, especially in urban and coastal areas.

In 2018 Spain received more than 82.8 million international tourists, 1.1 % more than in the previous year, according to the *Survey on Tourist Movements on the border*, issued by the INE; such growth rate involves a slowdown if compared to previous years. They account for 66.7 % of all the arrivals, and one third are considered to be just travellers (visitors who do not stay overnight). The growth in the number of foreign tourists between 2010 and 2018 was significant, with values around 57 %.

In 2018, the international tourist per inhabitant ratio achieved a value of 1.77; however, its territorial distribution per destination is heterogeneous. The autonomous communities with the highest incidence of international tourism were, in this order, the islands, led by the Balearic Islands, followed by the Canary Islands, and within the peninsula, Catalonia, with tourist per inhabitant ratios in these three autonomous communities of 11.87, 6.32 and 2.53 respectively, which in some cases has led to significant phenomena of tourist saturation that have affected the well-being of the resident population.

In general terms, there is a strong contrast between coastal autonomous communities (linked to sun and sand tourism) and inland communities. The destinations with the highest number of international tourists are located in the Mediterranean coast and the Canary Islands.

Number of international tourists per inhabitant



Source: Turespaña, INE

Air transport was the access mode most used by international tourists (67.5 million tourists, 81.6 % of the total), followed by road transport (13 million tourists, 15.6 %). As in previous years, maritime and rail transport continue to be the least used means, with almost 2 million (2.4 %) and 338 thousand (0.4 %) respectively. The trend for low-cost airlines and cruises is for them to continue expanding in the Spanish market. Specifically, the entries of non-resident travellers through airports and ports increased, respectively, around 52 % and 28 % in the 2008-2018 period, and by 1.3 % and 0.7 % in the last year.

Source: INE, Official population figures of the Municipal Register of Inhabitants as reviewed on 1 January.
Available at: http://www.ine.es/jaxiT3/Tabla.htm?t=2852
INE, Movimientos Turísticos en Fronteras. Number of tourists per access mode.
Available at: http://www.ine.es/jaxiT3/Tabla.htm?t=10835
INE, Tourism movements on the borders. Number of tourists as per main destination autonomous community.
Available at: http://www.ine.es/jaxiT3/Tabla.htm?t=23988
TURESPAÑA. State Secretariat for Tourism. Ministry of Industry, Commerce and Tourism. FRONTUR.
Available at: http://estadisticas.tourspain.es/es-ES/estadisticas/frontur/informesdinamicos/paginas/anual.aspx

2.3.6 TOURISM

International tourists per kilometre of coast

The indicator is the ratio between the number of international tourists whose final destination are the autonomous communities with coast and the length of same.

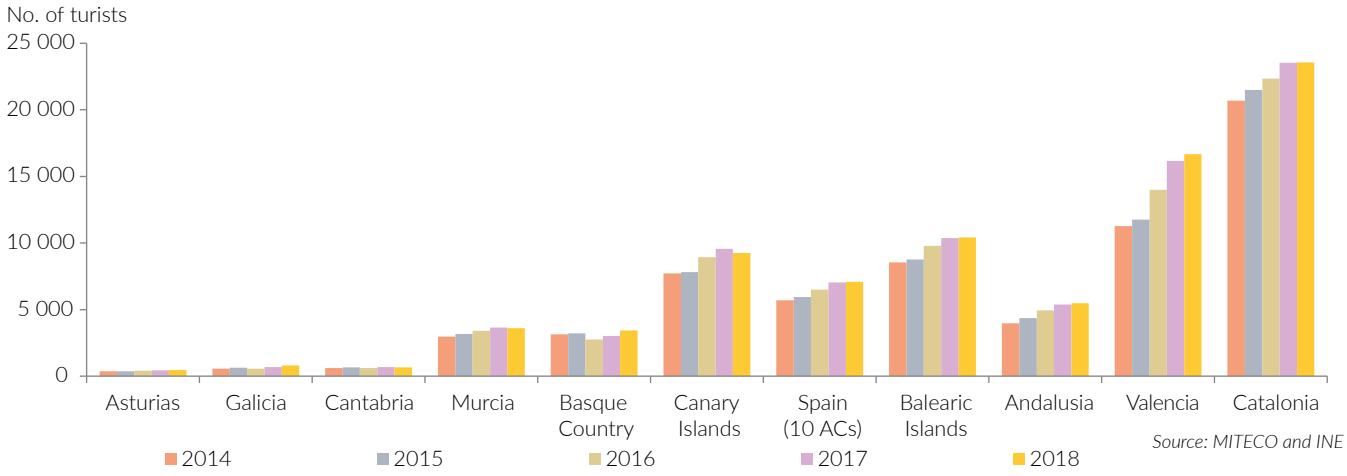
Justification

The analysis of the tourist congestion of destinations, linked, especially, to the product of sun and sand, is important to estimate the pressure carried out by the sector and to dimension the instruments of environmental management and supply of resources.

Again this year, the Spanish coast was the main tourism destination in Spain, with 87.6 % (72.5 million) international tourists who visited any coastal autonomous community in our country, which is equivalent to a ratio of 7,076 tourists per km of coastline. This value accounts for an increase of 0.6 % in the last year.
However, tourist congestion in the different coasts was uneven:

- The area with the highest influx of international tourists was the Mediterranean coastline and southern peninsula, with 54.8 million (75.6 % of the total). Catalonia (23,553 tourists/km), Valencia (16,683 tourists/km) and the Balearic Islands (10,418 tourists/km) are the communities with highest tourist ratios per kilometre of coastline.
- As for the Canary Islands, a total of 13.7 million international tourists, 19 % of the total, which equals some 9,261 tourists per kilometre of coastline.
- Finally, the Cantabrian coastline was the destination with the lowest pressure of visits. It received 3.9 million travellers (5.4 % of the total). The Basque Country (3,425 tourists/km) is the region with the highest ratio, and Galicia (797 tourists/km), Cantabria (652 tourists/km), and Asturias (455 tourists/km) have the lowest indicator value in 2018.

International tourists per kilometre of coastline



Source: MITECO and INE

In terms of the year-on-year variation 2017-2018 there is an increase of the indicator in most coastal communities (save for Cantabria, the Canary Islands and Murcia). Galicia and the Basque Country show the maximum variation, with increases of 16.7 % and 1.2 %, respectively. Finally, the destinations with the highest tourist traffic per autonomous community were Catalonia (19.1 million), the Balearic Islands (13.8 million), and the Canary Islands (13.7 million), versus Cantabria and Asturias (around 400 and 298 thousand tourists, respectively) which were the least demanded tourist destinations in absolute terms.

Source: Number of tourists: INE, Tourism movements on the borders. Number of tourists as per main destination autonomous community. Available at: http://www.ine.es/jaxiT3/Tabla.htm?t=23988
Length of coastline: Ministry for Ecological Transition "2014 Report on the status of Natural Heritage and Biodiversity" in Spain. Available at: https://www.miteco.gob.es/es/biodiversidad/temas/inventarios-nacionales/iepnb_2014_tcm30-196687.pdf

2.3.6 TOURISM

Equivalent Tourist Population in the main tourist areas

Ratio of annual overnight stays in hotels of a certain area to the number of days of the year. This allows the daily number of people that, as tourists, would be equal to the population living in that area to be estimated.

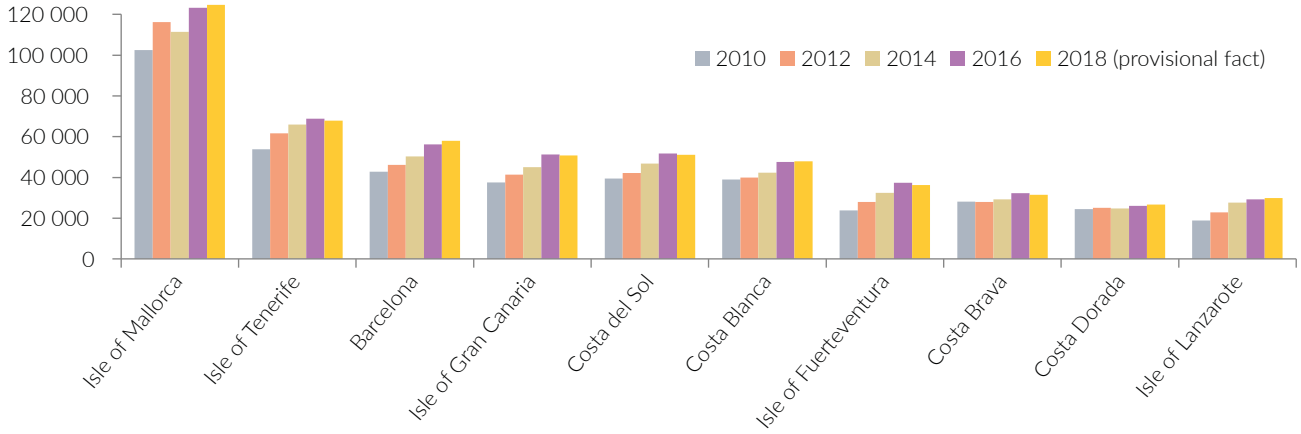
Justification

The interest of the indicator, from the environmental point of view, lies in paying attention to the pressure of the increase in the temporary population at the areas with the greatest number of tourists. This information is important to estimate the pressure of the sector and to dimension the instruments of environmental management and resource supply.

The total number of overnight stays in coastline hotels reached in 2018 191.6 millions, making the average Equivalent Tourist Population (PTE) reach a value of 525 thousand people per day. Barcelona and Costa Brava were the areas that experienced the highest increase of year-on-year PTE (2.7 and 0.6 % respectively), and in the other areas, the PTE is negative, especially in Fuerteventura and the Costa Dorada, with -6.5 % and -5.2 %, respectively.

In 2018, the island of Mallorca, with 45.5 million overnight stays in hotels (124.7 thousand people/day), continues to be, yet another year, the destination with the highest tourist influx although there is a slight decrease of 0.2 % in the indicator of the PTE compared to 2017. Behind them are Tenerife (24.8 million overnight stays, around 68 thousand people/day), Barcelona (21.1 million overnight stays, and with 57 thousand people/day) and Costa del Sol (18.6 million overnight stays; 51 thousand people/day).

Equivalent Tourist Population in the main tourist areas, 2010-2018 (Overnight stays/day)



Source: INE

On the other hand, the Pyrenees, linked to inland and nature tourism destinations, are the only non-coastal tourist area included in the INE Hotel Occupancy Survey. It received 3.8 million overnight stays in 2018 (more than 10,000 people/day), a slight decrease of 0.1 % compared to the previous year. This was mainly due to the decrease in the number of visitors to the Aragonese Pyrenees, around 3 %, although it is once again the leader of the Pyrenean tourist destinations. As for the Pyrenees of Navarre and the Basque Country, these experienced major increases, by 7.8 % and 6.8 %, respectively.

Source: INE, Hotel Occupancy Survey. Hotels. Travellers and overnight stays per tourist zone.
Available at: http://www.ine.es/jaxiT3/Tabla.htm?t=2039&L=0

2.3.6 TOURISM

Number of visitors to the national parks

This indicator analyses the annual evolution in absolute and relative terms of the number of visitors to the different areas comprising the National Park Network, with respect to their surface.

Justification

This indicator is often used to analyse the pressure on protected natural spaces as a result of tourism, as well as the degree of progress of the nature tourism product.

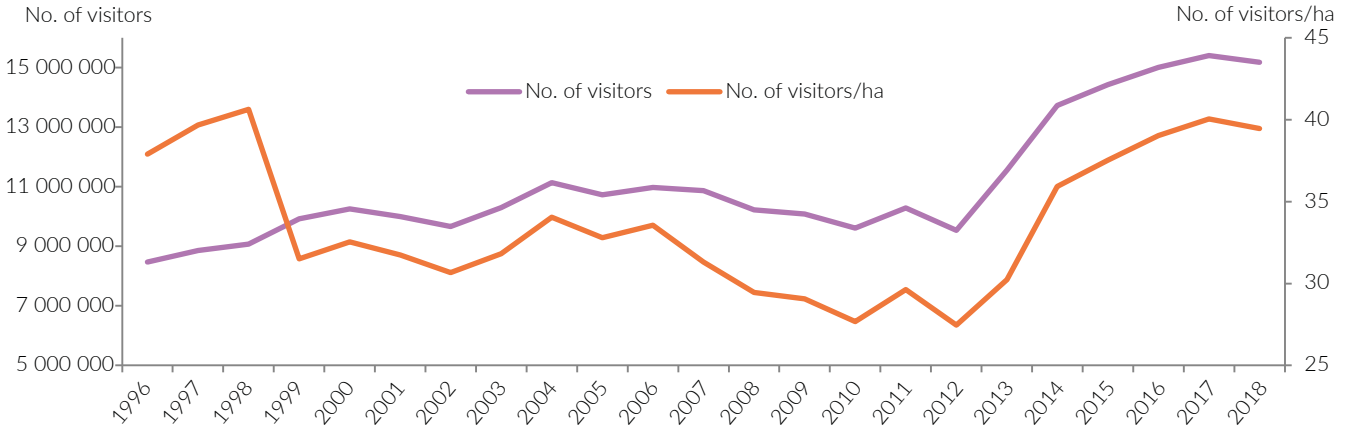
The indicator allows us to monitor key goal 1 of the 6th EAP (protecting, conserving and enhancing the EU's natural capital).

In 2018, the Spanish national parks reached a ratio of 39.5 visitors per hectare. Of all of them, the national parks of the Canary Islands, with a surface of 8.5 % of the total, got more than 50 % of visits, which implies a ratio of 232 visitors per hectare. Such a high number of visitors to national parks of the Canary Islands can be explained, in general terms, because their visit is usually part of the general tourist offer. However, the national parks of Sierra Nevada, Doñana and Cabañeros are those with lower ratios of visitors per hectare, with values of 8, 7 and 3 respectively.

In 2018, visits to national parks experienced a slight decrease by 1.5 % with respect to the previous year. The growth is especially remarkable in Doñana, with an increase of 31.8 %, Garajonay, with an increase of 16.9 %, Tablas de Daimiel with 15.6 %, Galicia's Atlantic Islands, with 11.2 %, and Ordesa y Monte Perdido, with 2.1 %. On the other hand, those whose number of visitors decreased are: Sierra de Guadarrama (-11.7%), Sierra Nevada (-10.6 %), Monfragüe (-8.9 %), archipelago of Cabrera (-6.3 %), Picos de Europa (-4.4 %), Cabañeros (-4 %), Caldera de Taburiente (-2.9 %), Timanfaya (-1.8 %), and Aigüestortes i Estany de Sant Maurici (-1.4 %). The national park whose number of visitors remains practically unchanged is Teide, with a growth of 0.1 %.

In 2018 the national park of Tablas de Daimiel was awarded the European Charter on sustainable tourism.

Visitors to National Parks



Source: Autonomous Body of National Parks (OAPN). MITECO

In the last decade, the growth of the number of visitors to these places was 47 %. Besides, from 1996 until 2018 there was an increase of 79 %, making the number of visitors to national parks go from 8.5 to 15.2 million, also considering the declaration of new national parks during the said period, such as Sierra Nevada (1999), Galicia's Atlantic islands (2003), Monfragüe (2007), Sierra de Guadarrama (2013), together with several extensions.

Source: Autonomous Authority for National Parks. Ministry for Ecological Transition Data provided by means of express request

2.3.6 TOURISM

Rural tourism: accommodation, capacity, tourists and overnight stays

The indicator analyses the progress of the main rural tourism variables: number of accommodations, tourist seats, travellers and overnight stays in rural accommodations by means of the *Survey on the occupation at non-hotel tourist accommodations*.

Justification

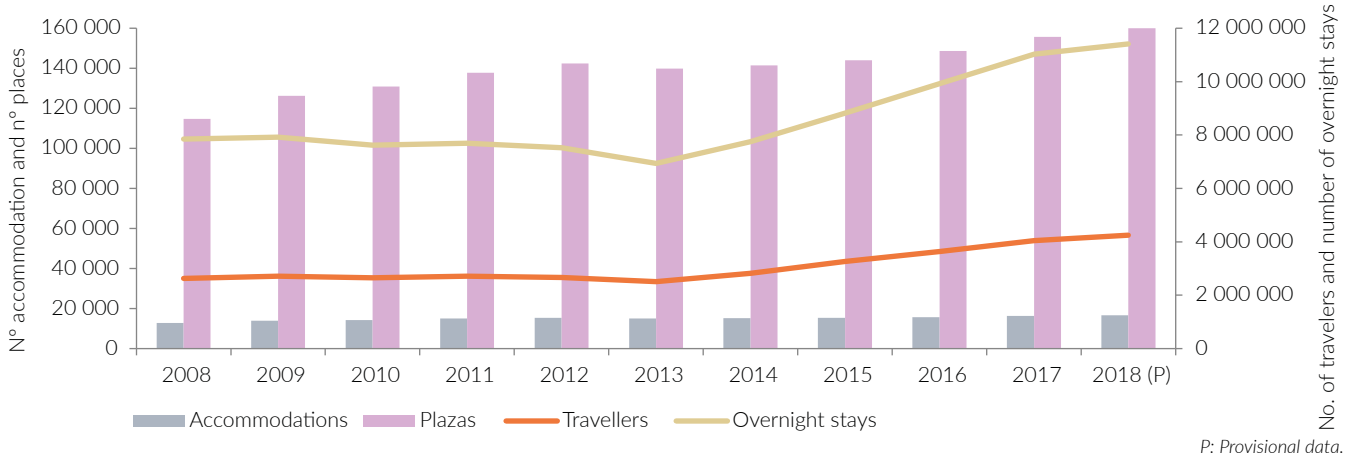
This indicator allows us to analyse the inland tourism trend, on the basis of the level of tourism diversification, both from the point of view of the territory and that of the demand of rural tourism products.

2018 was positive for rural tourism, according to INE data. Compared to 2017, the number of tourists and overnight stays (resident and non-resident) has grown by 5 %, and 3.4 % respectively in 2018. Also, the number of travellers reached 4,251,877 and overnight stays 11,413,480. In turn, an increase in the number of jobs created by rural tourism achieved 4.5 %, with 24,403 people employed in 2018.

Despite all that, in 2018 rural tourism accommodation only accounted for 2.4 % of the Spanish tourism accommodations. They only had a occupation per tourist seat well under the rest of tourism accommodation types; however, it increased by 0.6 % with respect to 2017. The number of seats offered continues to increase, with a total of 160,032 and an year-on-year 2.8 % increase is found, as well as in the total number of accommodation options, with a total of 16,598 and an increase of 1.5 %.

Rural tourism contributes to territorial balance and to dynamic inland destinations. In this sense, Castile-and Leon was, once again, leader in number of accommodation options, seats, overnight stays and visits. The communities with the highest number of accommodation options were in 2018 Castile-and Leon (3,555 accommodation options), followed by Andalusia (2,211), Catalonia (1,950) and Castile-La Mancha (1,669). These four regions concentrated more than half of the rural tourism accommodation options in 2018, with 56.5 % and of the seats, with 51.2 %.

Rural Tourism 2008-2018



P: Provisional data.
Source: INE

Since 2008, the number of tourists has increased by 62 % and that of overnight stays by 45.5 % for this type of tourism. The number of accommodation options and offered seats increased also by 29.7 % and 38.4 %, respectively. This rural tourism accommodation infrastructure, born partly in the 1990s as a result of the support of various initiatives and programmes for the economic diversification of the rural environment (LEADER and the former PRODER), and subsequently with the support of measures linked to rural tourism in the Rural Development Programmes of the EAFRD, has made it possible to create an important quality tourist offer.

Source: INE, Rural tourism accommodation: occupation survey and index of prices.
Available at: http://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176963&menu=resultados&secc=1254736195427&idp=1254735576863

2.4 SUSTAINABILITY

2.4.1 Economy and society

- Economic Evolution
- Population
- Population in risk of poverty or social exclusion

2.4.2 Waste and Circular, low-carbon economy

- Municipal Waste Generation
- Urban waste treatment
- Packaging waste
- Energy productivity
- Total Material Requirement
- Environmental taxes
- Environment Protection Expenditure
- Environment-related employment

2.4.1 ECONOMY AND SOCIETY

As of 1 January 2018, Spain's population stood at 46,658.447 inhabitants. Trend in recent years shows a population increase until 2012, when the decrease process started. Factors such as the return of immigrants to their countries of origin and the phenomenon of migration abroad (due to the financial crisis and difficulties to find a job) are among the reasons for this population variation, to which the reduced birth rate of our country has to be added. However, the resident population of Spain increased for the second consecutive year in 2018, which shows a reversion of the past trend. Nevertheless, the resident population of eight autonomous communities (Castile-Leon, Extremadura, Asturias, Castile-La Mancha, Melilla, Galicia, Aragon and Cantabria) decreased, while it increased in the remaining 11 regions, exceeding 1 % in the Balearic Islands, Madrid and in the Canary Islands. Such a population increase was mainly due to the growth of population of foreign nationality.

As it was set out in the *Report on Immigration in Spain: effects and opportunities*, dated March 2019, prepared by the Economic and Social Council, the latest available information provided by the International Organisation for Migrations places Spain among the main 20 countries of destination for international migrations. Said position depends on different factors, and is extremely related to the role played by the welfare state in attracting migratory flows towards our country. Language is also an important attraction element for Spanish-speaking immigrants, just like proximity to the African continent.

Since 2008, the year with the highest number of births per thousand inhabitants (11.3), until 2017 (with 8.4), this rate shows a clear downward trend. The preview for 2018 shows that in the first half of the year the number of births has fallen even further (by 5.8 %) with 179,794 births registered. Bearing in mind, moreover, that in the first half of 2018 there were 2.1 % more deaths than in the first half of 2017, the natural growth of the population (births minus deaths) was -46,590 persons in the first six months of 2018, even more negative than in the same period of 2017.

According to the last population projection made by INE, in 2033 the total population of Spain will exceed 49 million inhabitants if current demographic trends remain the same.

This translates into an increase of over 5.1 % for Spanish population in the next 15 years. The negative natural growth forecast (as the number of deaths is greater than the number of births) may be compensated for by a positive migratory balance that will increase the resident population.

In 2018 the Spanish population structure showed 15 % under 15 years old, 66 % between 16 and 65, and the remaining 19 % over 65 years old. Between 2017 and 2018 the resident population older than 85 increased by 3.8 %, thus reaching 1,465,474 inhabitants. It must be borne in mind that the population ageing influences the economic growth and sustainability of public finances, both due to the budget item for pension payments, and due to the health costs this population sector usually has. Therefore, such public finances must be properly planned to meet social and financial needs as required.

2.4.1 ECONOMY AND SOCIETY

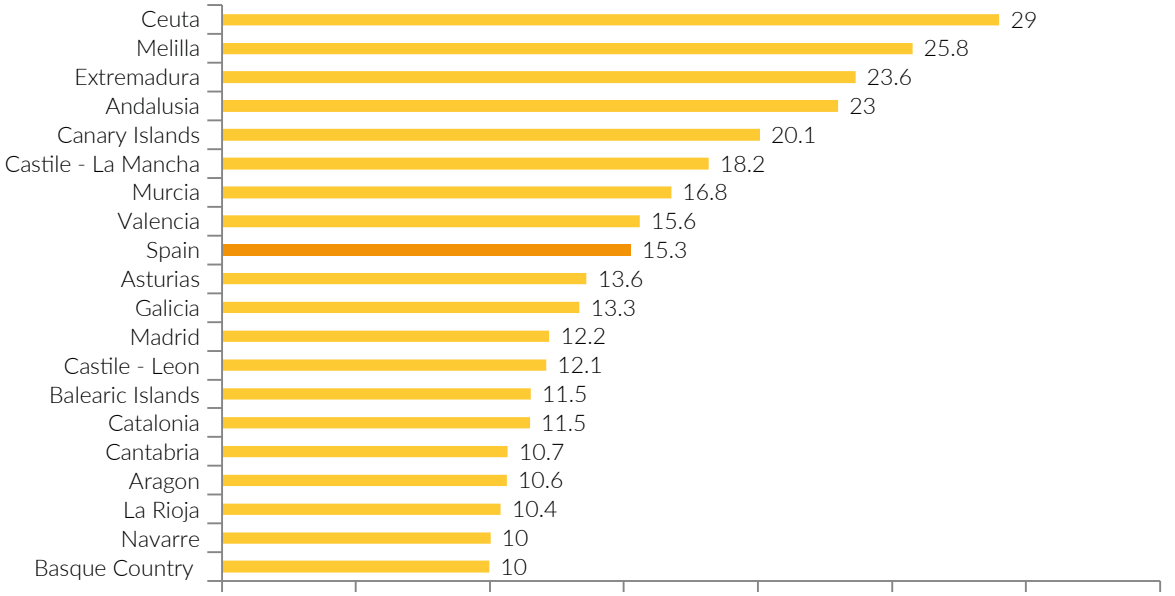
According to the preliminary information on individuals registered with the *Spanish Continuous Registry of Inhabitants' Statistics*, whose data is still provisional, there were 47,007,367 inhabitants as of 1 January 2019. This shows an increase of 84,387 individuals (0.6 %) if compared to data of 1 January 2018. Out of this total, 89.3 % were Spanish nationals, while the remaining 10.7 % were foreigners.

In 2013, Spain had over six million unemployed (unemployment rate of 26.1 %). In 2018, the total number of unemployed was almost 3.5 million (unemployment rate of 15.3 %). This circumstance evidences the recovery process of our country after the economic and financial crisis that began in 2007. Employment creation has been more intense in some of the areas in which more jobs were lost during the crisis (construction, industry and market services). In 2018 there was a decrease in the number of employed individuals in sectors such as agriculture and cattle breeding, commercial activities and in financial and insurance activities.

It has become evident over recent years how, out of the total number of unemployed people, the percentage of men is decreasing, while that of women increases. In 2016 more women (50.6 %) than men (49.4 %) were unemployed. In 2018, unemployed women were 51.9% of unemployed, compared to 48.1 % of men.

Our country's unemployment rate reveals strong regional imbalances. The unemployment rate of eight autonomous communities was higher than the average for Spain. Our state of competence is protected by the principle of solidarity established in the Constitution, although it offers a margin for improvement in its application due to the unequal distribution of economic development between urban and rural areas and the strong industrial drive of the former (with business and technology parks, specialized services, etc...). If we add the tourist potential of certain coastal areas and also urban areas, the result is that the rural environment becomes a very disadvantaged area with a high risk of depopulation.

Unemployment rates. Year 2018



Source: INE

"To promote sustainable, inclusive and stable economic growth, full, productive employment and decent jobs for everyone" **is Goal 8 of the 2030 Agenda for Sustainable Development.**

2.4.1 ECONOMY AND SOCIETY

Rural areas are at risk of depopulation, a process that has become one of the greatest political and social challenges in Spain. The disappearance of population from rural areas leads to overpopulation processes in other areas giving rise to demographic, social and economic imbalances. This also leads to alterations of the ecological balance due to increased population pressure and consumption of resources. The National Strategy for the Demographic Challenge, drawn up by the Ministry of Territorial Policy and Public Service, is expected to be approved in 2019. In this sense, the Council of Ministers of 29 March 2019 approved the *Agreement on general guidelines of the National Strategy for the Demographic Challenge*, prepared by the Government's Commissioner on the Demographic Challenge, reporting to the Ministry of Territorial Policy and Public Function.

One of the challenges existing at EU level is the under-representation of women in the labour market, and the uneven sharing of professional and family responsibilities between both parents with dependant children or people with dependant relatives. The EU is working on a directive proposal regarding reconciling of work and family life of parents and caregivers to repeal Directive 2010/18/EU. Its general goal is to "*guarantee the implementation of the principle of gender equality regarding job opportunities and treatment at work*". Specific objectives include: improving access to measures to reconcile family and working life, such as leave or flexible working arrangements, and increasing the frequency with which men take family-related leave.

"The National Strategy to Face the Demographic Challenge poses three demographic challenges: progressive population ageing, territorial depopulation, and the effects of the floating population."

Similarly, the Strategy for Fair Transition, which is part of the Strategic Framework for Energy and Climate, which will include in the future the National Integrated Energy and Climate Plan (PNIEC) and the Act on Climate Change and Energy Transition, will become, once approved, an instrument for the creation of green jobs in the rural environment, together with the National Strategy for Demographic Challenge.

According to the *Encuesta de Población Activa (Spanish Labour Force Survey)* in 2018, 358,200 employed people, most of them women (344,800), chose part-time jobs to be able to assist dependent people (children, adults, ill and disabled people, etc..). These values were 28.8 % higher than those of 2017 (278,000 employed people).

On the other hand, the *Encuesta de Condiciones de Vida (Spanish Living Conditions Survey)* analyses, among other variables, the indicator of poverty or social exclusion risk. In 2017, 26.6 % of resident population of Spain grew was under risk of poverty or social exclusion, a value that was lower than that of 2016 which was of 27.9 %. This indicator appears to be improving over the last few years, as the percentage of population in risk of poverty or social exclusion has decreased since 2014, year in which the maximum of the series was reached, with 29.2 %. Regarding the EU-28, in 2017 only six countries had rates of risk of poverty or social exclusion above that of Spain.

2.4.1 ECONOMY AND SOCIETY

Over the last year, there was a decrease in all three components of the AROPE rate (At Risk of Poverty and/or Exclusion. See the relevant indicator). Thus, the low intensity in employment decreased from 14.9 % to 12.8 %, severe material scarcity went from 5.8 % to 5.1 % and the risk of poverty situation from 22.3 % to 21.6 %.

Since 1987, 17 October marks the International Day for the Eradication of Extreme Poverty (declared by the United Nations in 1992).
It promotes dialogue and understanding among people living in conditions of poverty and their communities, as well as the society in general.
Resolution 47/196 adopted on 22 December 1992.

Another manifestation of poverty and social exclusion is "energy poverty". Recognised by the EU and the UN, and included in the Sustainable Development Goals (Goal number 7 refers to the use of "*Affordable, clean energy*"). Spain included energy poverty in its political agenda by virtue of *Royal-Decree law 15/2018, of 5 October, on urgent measures for energy transition and protection of consumers*, which made it compulsory to approve a National Strategy against energy poverty. The National Strategy against Energy Poverty 2019-2024 was passed in April 2019 and, in addition to a diagnosis of the situation and a first official definition of energy poverty, it lays down objectives to reduce by 2025, at least 25 %, with the goal of achieving a reduction of 50 %.

Not only does it forbid interrupting the supply in extreme climatological conditions and create a new social energy bond, it also guarantees a minimum vital supply for a period of time of four months, as an extension of the period prior to the supply company interrupting the service due to non-payment.

Four are the Official primary indicators of the European Observatory that allow the monitoring of energy poverty. The situation in Spain in 2017 and the goals to reach are set out in the following table:

National Strategy to fight Energy Poverty 2019-2024. Monitoring indicators	2017	2025 Minimum objective	2025 Goal
Disproportionate expenditure: percentage of households whose energy consumption in relation to their income exceeds the national median by more than half.	17.3	12.9	8.6
Hidden energy poverty: percentage of households whose absolute energy expense is lower than half of the national median	11.5	8.6	5.7
Inadequate temperature: percentage of the population who cannot heat their homes at an acceptable standard.	8	6	4
Delay in payment of invoices: percentage of the population with delays in the payment of invoices for household supplies	7.4	5.5	3.7

2.4.1 ECONOMY AND SOCIETY

According to the National Institute of Statistics, in 2017, 8.1 million Spaniards incurred expenses that were not proportional to their income; 5.1 million people suffer hidden energy poverty; around 3.7 million spend winter at inadequate temperatures, and 3.5 million people cannot pay invoices in due time.

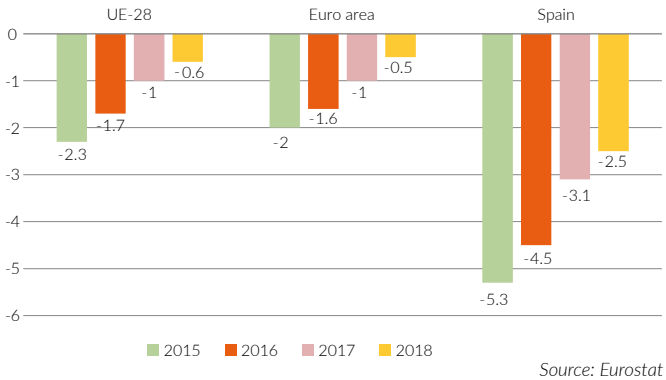
Energy poverty is a situation of households which cannot meet the basic needs of energy supply, as a result of an insufficient income level and which may become worse in case of an energy-inefficient household. 3.5 to 8.1 million people, depending on the indicator used, find themselves in a situation of energy poverty in Spain.

Regarding the national economy, the deficit of the whole Spanish public administrations closed 2018 at 29,928 million Euros, or 2.5 % of the Spanish Gross Domestic Product (GDP). This is six tenths lower than the imbalance of the preceding year, which reached 3.1 % of the GDP. The reason for such a decrease has its origin in the higher increase of income vs expenses.

This is the first year when deficit is below 3 % of the GDP, after 10 years in which it exceeded it. This allows Spain to leave the Excessive Deficit Procedure of the European Commission. The Treaty on the functioning of the European Union regulates the excessive deficit procedure in article 126, for countries to prove healthy finances. Two criteria must be met for this purpose: their budgetary deficits cannot exceed 3 % of GDP and their public debts (government and public entities debt) cannot exceed 60 % of GDP.

The improvement in the Spanish economy can be seen in the evolution of the deficit and how it has decreased in recent years. According to Eurostat data, it accounted for 5.3 % of GDP in 2015, which came down to 4.5 % in 2016, 3.1 % in 2017 and finally, 2.5 % in 2018. According to the forecast of the General Intervention Board of the State Administration, reporting to the Ministry of Finance, the public deficit is due to stand at 2 % of GDP in 2019, lower than the initial forecast of 2.2 % to 2.4 %.

Government deficit (% GDP)



Source: Eurostat

2.4.1 ECONOMY AND SOCIETY

Spain was, until now, the only country under this control and surveillance mechanism, after France left it last year.

Public debt (as % GDP) decreased both in EU-28 as in the Euro zone, and reached in 2018 values of 80 % and 85.1 %, respectively. It also declined in Spain, from 99.3 % in 2015 to 97.1 % in 2018. According to Eurostat, by the end of 2018, the lowest government debt ratios to GDP were those of Estonia (8,4 %), Luxembourg (21.4 %), Bulgaria (22.6 %), Czech Republic (32.7 %), Denmark (34.1 %) and Lithuania (34.2 %). Fourteen Member States had government debt ratios exceeding 60 % of GDP, with the highest one registered in Greece (181.1 %), Italy (132.2 %), Portugal (121.5 %), Cyprus (102.5 %), Belgium (102 %), France (98.4 %) and the above mentioned one for Spain (97.1 %).

2018 marked five years of the GDP growing trend, after the recession that hit the economy between 2009 and 2013. In terms of volume, GDP growth exceeded 2.6 % in 2018 (provisional data in terms of volume, corresponding to the first estimates).

In 2018, Spain accounted for 7.6 % of all EU-28 GDP, similar to that of recent years, but still lower than that of 2010, for example, when it reached 8.4 %. It was the fifth contributor, only after Germany (top contributor, with over 20 %), United Kingdom, France and Italy. Per inhabitant, it ranked thirteen that year between EU-28 countries. With €25,900/inhab, we were below the average €30,900/inhab existing in EU-28. By regions, Madrid, Basque Country and Navarre offered this year a GDP exceeding the European average.

That year, the contribution of sectors to GVA places, once again, services at the forefront of the others, with a contribution of 73 %, followed by industry (18 %) and construction (6.5 %), with the latter showing an increasing weight. Agricultural, forestry and fish farming activities remain in the range of 3 % of the total GVA contribution.

In 2018, GVA for construction increased by 9.8 % (percentage even higher than 8.7 % of 2017), and makes it the fourth consecutive year it increased after the crisis.

Unemployment rate was 15.3 % in 2018, and showed a positive trend after the maximum registered in 2013 (26.1 %). This is, however, one of the worst values in the EU-28, only surpassed by Greece with 19.3 % unemployment rate in 2018.

With regard to employment, the sectors that most increased the number of people employed in 2018 were construction, hotels, education, public administration and manufacturing. All of them with increases of more than 50,000 employed people. Construction shows a remarkable trend, with 93,500 more occupied in 2018 than in 2017, followed by the hotel industry with an increase of 70,600 occupied. It is obvious how employment creation has been more intense in some of the sectors in which more jobs were affected during the crisis (construction, industry and market services).

2.4.1 ECONOMY AND SOCIETY

Economic Evolution

The indicator shows economic evolution measured as Gross Domestic Product (GDP) at market prices, both in absolute figures and per capita. GDP is one of the main aggregates of the national economy (along with national income and employment) in the system of national accounts.

The population figure used by the INE to make the per capita estimate refers to the population resident on 1 July of each year.

Justification

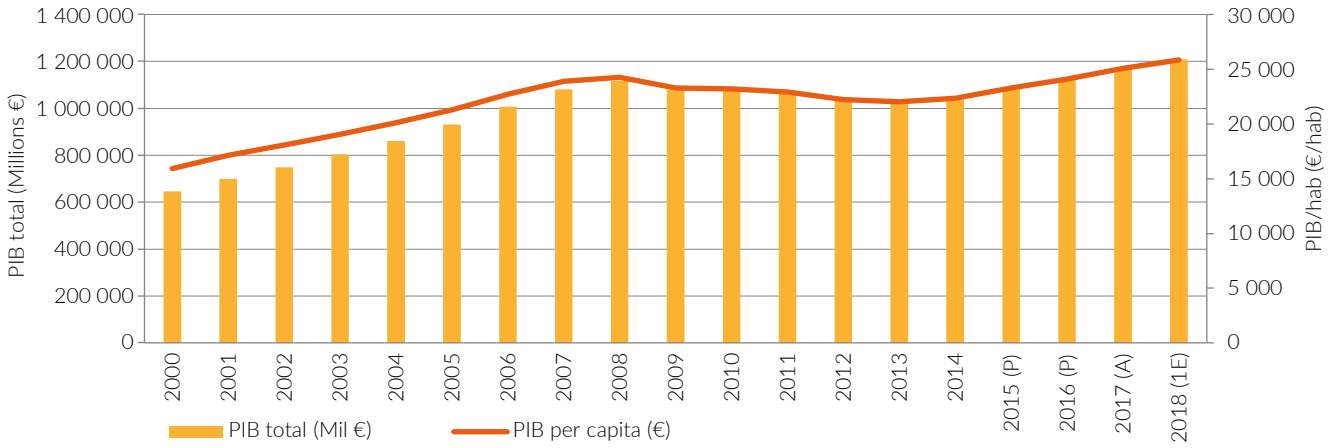
GDP is one of the variables used to analyse and evaluate the structure and evolution of regional economies and serves as the statistical basis for the design, implementation and monitoring of economic policy. In short, it is one of the main statistical indicators used to measure the economic evolution of a country.

Throughout 2018 (still with initial estimate data) there is an extension of the expansive stage of the Spanish economy, with five consecutive years of growth, after the downturn between 2009 and 2013. In volume terms, GDP growth exceeded 2.6 % that year.

Improved financial conditions and the performance of external markets have contributed to the progress of the economy. The confidence of businesses and consumers has boosted sectors that had taken a back seat after the crisis.

Spain's unemployment rate reached 26 % in 2013. This is the peak following the period of economic downturn, with a slow recovery starting that year which made it reach 17.2 % in 2017 and 15.3 % in 2018. Employment creation has been more intense in some of the sectors in which more jobs were destroyed during the crisis (construction, industry and market services). However, there was a slowdown in service activities characterised by greater dynamism in previous years (hotels, transport, commerce, etc..).

Gross Domestic Product (GDP) at total and per inhabitant market prices.



P: provisional / A: advancement / 1E: First estimate
Source: INE

In relation to the population, the average GDP per inhabitant in Spain in 2018 was 25,854 €/inhabitant. The Community of Madrid had the highest per capita GDP (34,916 €/inhabitant). It was followed by the Basque Country (34,079 Euros) and the Autonomous Community of Navarre (31,809 Euros). The regions with the lowest GDP per inhabitant were Extremadura (€18,174), Melilla (€18,482) and Andalusia (€19,132).

This per capita GDP was lower than the EU-28 average of 30,900 €/inhab, and placed Spain in the 13th position among its European partners. Three autonomous communities (Madrid, Basque County and Navarre) exceeded the European average.

Source: National Institute of Statistics (INE) Consult at: INEbase/Economía/Cuentas económicas/Contabilidad regional de España/Principales resultados/PIB y PIB per cápita. 2000-2018 Series.
https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736167628&menu=resultados&idp=1254735576581

2.4.1 ECONOMY AND SOCIETY

Population

The indicator includes the official population figures for Spain. Included are those coming from the revision of the Municipal Register (administrative register of the residents of each Spanish municipality as of 1 January of each year declared official by means of a Royal Decree) and those referring to the resident population on 1 January and 1 July of each year (number of people from a geographical area who on the reference date have set their usual residence there).

Justification

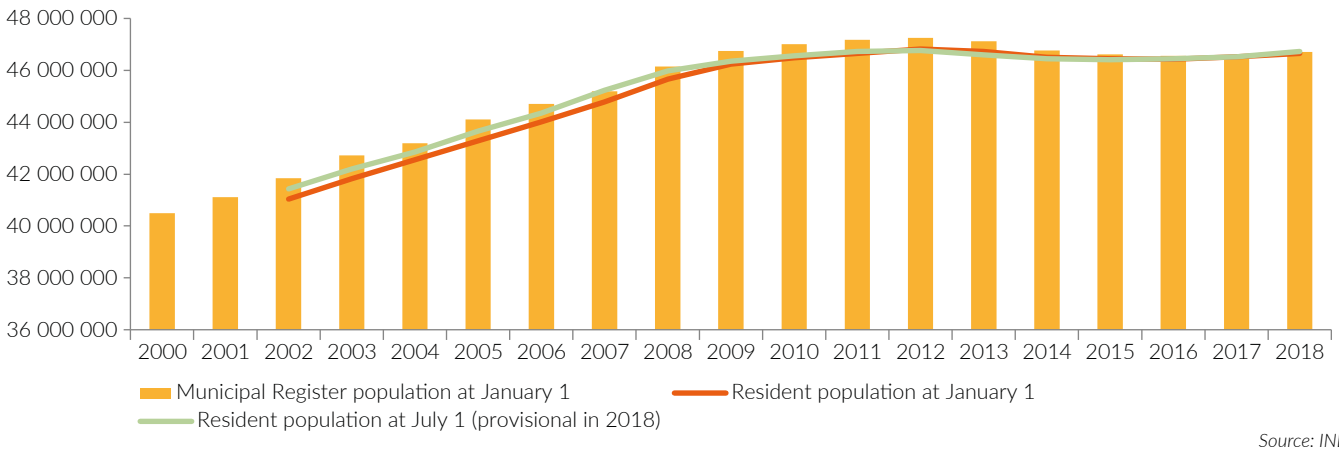
Population figures are key statistical information for describing a society and are an essential element in the whole statistical system.

Regulation (EU) 1260/2013, of 20 November 2013, on European demographic statistics, establishes a common legal framework for the development, production and dissemination of European statistics on population and vital events

As of 1 January 2018 the resident population of Spain reached 46,658,447 inhabitants, very similar to the 46,722,980 registered in the review of the municipal register of inhabitants. Trend in recent years shows a population increase until 2012, when the decrease process started.

The resident population in Spain grew in 2017 for the second consecutive year and the preliminary information of 1 July 2018 increased it to 46,733,038 inhabitants, consolidating the growth started in the second half of 2015. This growth in the first half of 2018 is due (still with provisional data) to a negative natural increase (births versus deaths) of 46,273 inhabitants and a positive migratory balance of 121,564 persons (immigration of 287,882 persons and emigration of 166,318 persons).

Total population of Spain (inhabitants)



Source: INE

The *Preview of the Continuous Registry of Inhabitants Statistics as of 1 January 2019* published by the INE, offers provisional data on the population registered with the Continuous Registry of Inhabitants, which reached 47,007,367 inhabitants, of which 89.3 % are Spanish nationals and 10.7 % were foreigners.

Source: National Institute of Statistics (INE) Consult at:

- INEbase/Padrón. Population by municipality / Official population figures of Spanish municipalities: Municipal Register Review / Official figures from the review of the Municipal Register as of 1 January. www.ine.es/jaxiT3/Datos.htm?t=2853
- INEbase/Cifras de población y Censos demográficos/Cifras de población/Series detalladas desde 2002. www.ine.es/jaxiT3/Datos.htm?t=9681

2.4.1 ECONOMY AND SOCIETY

Population in risk of poverty or social exclusion

This indicator shows the percentage of the population resident in Spain that is in a situation of risk of poverty or social exclusion, with respect to the total resident population. Information of the European Union is provided, too.

Justification

People at Risk of Poverty or Exclusion are identified in the Europe 2020 Strategy (strategy for smart, sustainable and inclusive growth) by the acronym ERPE or AROPE (At Risk of Poverty and/or Exclusion).

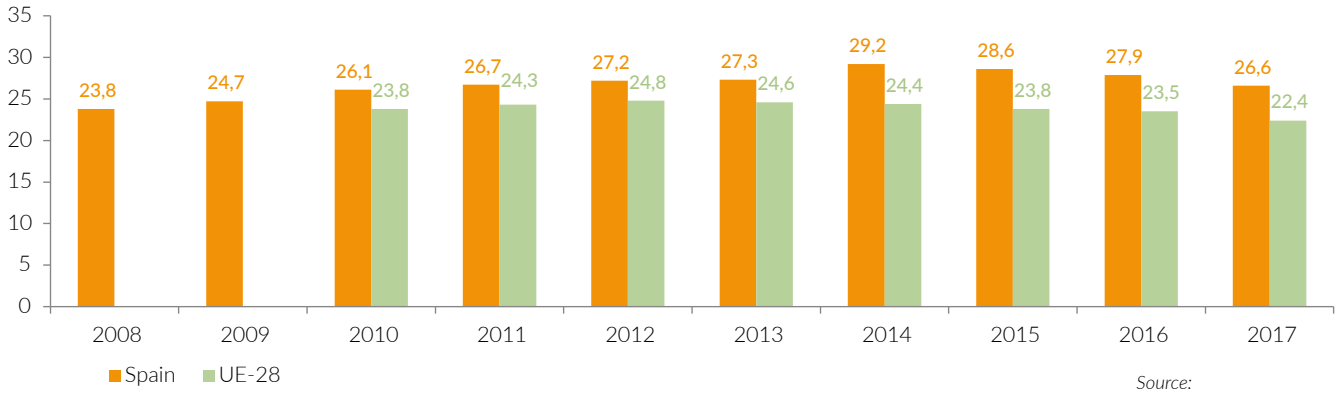
The indicator allows the SDG to be monitored mainly of goal 1 (End of poverty).

The *Encuesta de Condiciones de Vida (Spanish Living Conditions Survey)*, issued by the INE, calculates, among other variables, the aggregated AROPE indicator of poverty or social exclusion risk. It provides information by age group, type of household, employment situation, income and type of household and level of education. In 2017, 26.6 % of the resident population of Spain was at risk of poverty or social exclusion. In 2016, this percentage was 27.9 %. This indicator appears to be improving, as the percentage of population at risk of poverty or social exclusion, an evident situation from 2014 onwards, year in which the maximum of the series was reached.

The three components of the AROPE rate have decreased in the last year. Thus, the low employment intensity went from 14.9 % to 12.8 %, severe material deprivation went from 5.8 % to 5.1% and the risk of poverty from 22.3 % to 21.6 %.

Within the framework of the European Union, only six countries in 2017 had a higher risk of poverty or social exclusion than Spain, which does not place us in a good position.

Poverty or social exclusion rate (AROPE indicator)



Source:
- Data for Spain: INE
- Data EU-28: Eurostat

SDG INDICATOR 1.2.2. PROPORTION OF MEN, WOMEN AND CHILDREN OF ALL AGES LIVING IN POVERTY, IN ALL ITS DIMENSIONS, ACCORDING TO NATIONAL STANDARDS.	TREND 2015-2017	PAST YEAR TREND	OBJECTIVES OUTLOOK
Population at risk of poverty or social exclusion: AROPE indicator			

Source: National Institute of Statistics (INE) Survey on Living Conditions (SLC) Year 2017 Website consultation:

- INEbase/Condiciones de vida/Encuesta de condiciones de vida/Resultados nacionales/Riesgo de pobreza o exclusión social (estrategia Europa 2020) (renta año anterior a la entrevista)/5.2 Riesgo de pobreza o exclusión social y de sus componentes por edad y sexo. https://www.ine.es/jaxiT3/Datos.htm?t=10005
- INEbase/Indicadores de la Agenda 2030 para los Objetivos de Desarrollo Sostenible/Descargar Objetivo 1. https://www.ine.es/dynt3/ODS/es/objetivo.htm?id=4836

2.4.1 ECONOMY AND SOCIETY

Rate of jobs in the sustainable tourism with respect to the total number of tourism jobs

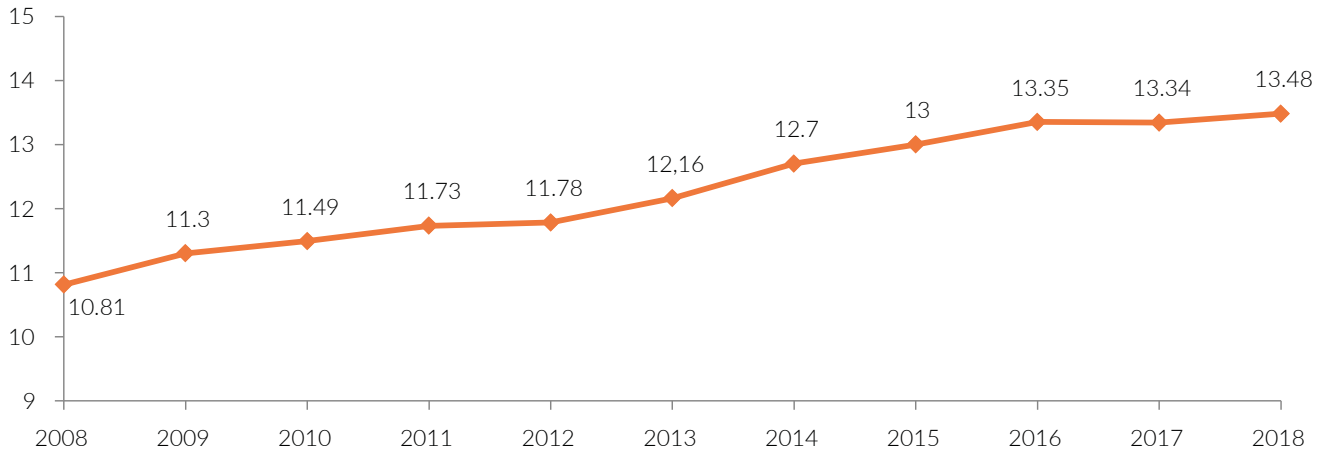
The indicator shows the ratio between the number of jobs in the sustainable tourism sector with respect to the total number of tourism jobs.

Justification

The indicator is included in the INE as indicator 8.9.2 and allows us to monitor goal 8 of the SDG, specifically target 8.9 (By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products).

In relation to the proportion of jobs in the sustainable tourism sector regarding total tourism jobs, the *Employment Survey* shows a progressive increase of almost two and a half percentage points, if we take 2008 as the reference year, with a slight decrease in 2017. The indicator currently stands at 13.5 %.

Rate of jobs in the sustainable tourism sector with respect to the total number of tourism jobs (%)



Source: INE

Since 2015, date used by the INE as the base data for analysing progress on target 8.9 of the Sustainable Development Goals (SDG), this indicator has made progress worth of 0.48 points, and therefore, the contribution to goal 8 of the SDG has made progress too. "To promote sustainable, inclusive and stable economic growth, full, productive employment and decent jobs for everyone". All progress made by this indicator ultimately involves a higher quality of tourist employment, which is key for sustainability.

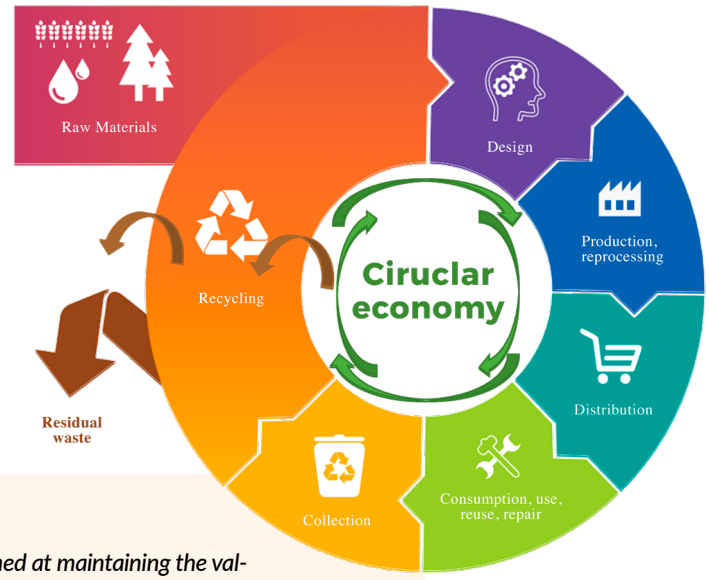
Source: INE, Encuesta de Población Activa (Spanish Labour Force Survey). Bank of time series. Series EPA366495.
Available at: https://www.ine.es/consul/menu.do
INE, Indicators of the 2030 Agenda for Sustainable Development.
Available at: https://www.ine.es/dynt3/ODS/es/objetivo.htm?id=4882

2.4.2 WASTE AND CIRCULAR, LOW-CARBON ECONOMY

The current economic system is based on the productive growth of goods and services under a "use-consume-throw away" model, which implies an intensive use of natural resources, thus putting high pressure on the environment. Said use is more damaging when dealing with non-renewable resources, or when said resources are scarce in the natural environment and are key for producing certain goods and equipment.

Consequently, the deterioration of the ecological footprint at a global level demands for the search for integral solutions based on collaboration and coordination between economic and social agents and public Administrations in order to tackle, in a common way, the environmental, economic and technological challenges we face. This will allow us to take advantage of the opportunities arising from such a change of paradigm for economic and social growth in the transition towards a circular economy.

Progress towards the circular economy only makes sense with the involvement of the business world and citizens. Therefore, the participation and involvement of society as a whole is necessary in order to promote adequate consumption criteria, thus conditioning production patterns.



What is circular economy?

Eurostat defines circular economy as that "*aimed at maintaining the value of products, materials and resources for as long as possible by returning them into the product cycle at the end of their use, while minimising the generation of waste.*". Its scope is structured around four areas: production and consumption, management of waste, secondary raw materials and competitiveness and innovation.

Source of graphic: State Waste Management Framework Plan 2016-2022 (Plan Estatal Marco de Gestión de Residuos 2016-2022) Own adaptation.

The future Spanish Circular Economy Strategy (EEEC) will promote the internalization of the principles of sustainability and the adoption of a circular economy pattern that strengthens the economy's behaviour with regards to the environment, mainly through an improvement of natural resources.

One of the ways to improve material productivity is the use of secondary raw materials, reducing dependence on raw materials while ensuring the supply of environmentally and economically viable alternatives. Secondary raw materials comprise the legal concepts of by-product and end of waste status, among others. In this sense, the *Act 22/2011, of 28 July 2011, on waste and polluted soils*, lays down conditions for a certain substance or object resulting from a production process, the purpose of which is not the production of said substance or object, to be considered a by-product and not waste. Said consideration as by-product is set forth by Ministerial Order for specific use after the statement procedure to be carried out. In the 2015-2018 period, 56 requests were received to commence the procedure of declaration of by-product, and 2 have been opened ex officio. Out of those requests, by the end of 2018, 13 had been unfavourably assessed, and 3 favourably, with two of them having their relevant ministerial order approved. As for the end of waste status, two ministerial orders have been approved, and one is pending processing. Additionally, there are 9 other types of waste for which the potential approval of criteria of end of waste status is being assessed.

2.4.2 WASTE AND CIRCULAR, LOW-CARBON ECONOMY

Together with the EEEC, the first *Action Plan on Circular Economy* will be organised in five main action lines (production; consumption; waste management; secondary raw materials; and water reuse). It will also incorporate three transversal axes (awareness-raising and participation; research, innovation and competitiveness; and employment and training).

The Pact for the Circular Economy, promoted by the Ministry for Ecological Transition, offers a commitment to which more than 340 of the main political, economic and social agents have adhered in the transition towards a new economic model.

The framework established by the *EU Action Plan for Circular Economy* (COM (2015) 614 final), of December 2015, considers plastics as one of its priority areas of work. In its analysis, it highlights that less than 25 % of collected plastic waste is recycled in the EU and 50 % is deposited in landfills, with a trend of constant growth in its use. Every European may use up to 200 plastic bags per year, mostly disposable ones.

The *Commission's Work Programme for 2018 (COM (2017) 650 final)* sets out the objective that all plastic packages should be recyclable by 2030.

As part of this Plan "*The Commission will adopt a strategy on plastics in the circular economy, and tackle issues such as irrecoverability, biodegradability, presence of hazardous substances in certain plastics, as well as marine waste*". This strategy was approved in January 2018 by Communication of the Commission *A European strategy for plastics in a circular economy* (COM (2018) 28 final, of 16 January).

The *Action Plan of the Spanish Circular Economy Strategy*, which develops the European strategy, shall include as its third axis, intended for waste management, the preparation of an *Action Plan for plastics*.

This *Action Plan for plastics* shall have as general purposes the following ones:

1. Improve information and knowledge on the plastic sector.
2. Promote the prevention of plastic waste (quantitative, qualitative and the environmental impact).
3. Avoid plastic waste in the environment (marine and land).
4. Improve the processing of plastic waste, by increase its reuse and recycling rate.
5. Strengthen the market of secondary raw material in order to reduce the dependency on fossil raw materials, and improve the market outlets for recycled plastics.

In order to implement a correct policy on consumption of plastic bags, *Royal Decree 293/2018, of 18 May, on the reduction of consumption of plastic bags and creating the Register of Manufacturers*, implements a regulatory framework with "*measures to reduce the consumption of plastic bags, in order to prevent and reduce the adverse impacts that waste generated by such bags has on the environment, with special attention to the damage caused to water ecosystems.*". That regulation is completed by the performance of information and awareness-raising campaigns aimed at offering information on the consequences of its use and disposal.

2.4.2 WASTE AND CIRCULAR, LOW-CARBON ECONOMY

The autonomous communities, for their part, are developing their own initiatives regarding the circular economy. Some examples found in their websites:

Castile-La Mancha is preparing the Draft Law on Circular Economy of Castile-La Mancha, aimed at incorporating into the region's internal legal system the principles of Circular Economy in different sectors, making it compatible with the new EU measures.

(http://www.castillalamancha.es/gobierno/agrimedambydesrur/estructura/vicmedamb/actuaciones/anteproyecto-de-la-ley-de-econom%C3%ADa-circular-de-castilla-la-mancha).

The Community of Madrid promotes "MADRID7R Economía Circular" to foster transition from a linear economic model to a circular economic model. Its aim is to encourage citizens, businesses, non-profit organisations and public administrations to change the logic of "extract, manufacture, use and dispose" to that of "reuse, repair, renew and recycle" imitating nature, in which everything is used, to achieve a sustainable economy, efficient in the use of resources and competitive. (http://www.madrid7r.es/)

Two initiatives in the Basque Country:

- *Draft Circular Economy Strategy of the Basque Country 2030. (http://www.euskadi.eus/contenidos/informacion/economia_circular/es_def/adjuntos/EstrategiaEconomiaCircular2030.pdf)*
- *Circular Basque is a network of organizations committed to improving and implementing the Circular Economy in the Basque Country, and a space where the initiatives that are being carried out in this field and most relevant news are shared. It is an initiative promoted by Innobasque, the Basque Agency for Innovation, aimed at promoting the development of new models of innovation from all its perspectives (http://www.circularbasque.eus/).*

Extremadura has a website called Extremadura 203. Green, circular Passport in which it shares the thematic axes and its strategy lines for 2030, together with videos and visual resources (www.extremadura2030.com).

The Andalusian Strategy for Sustainable Development 2030, is mainly aimed at accelerating transition to a green circular economy in Andalusia. In addition to setting bases for orientation of public policy intended to harmonising economic growth and protection of the environment (https://eco-circular.com/wp-content/uploads/2018/06/edas_2030.pdf).

The Catalonia Circular Economy Observatory includes in its website all existing initiatives in this area in Catalonia. It also generates knowledge for applying circular economy in Catalonia, identifying trends and opportunities (catalunyacircular.gencat.cat).

The Agenda for the Development of the Circular Economy in Navarre (in preparation) will specify a programme of public policies towards sustainability and the fight against climate change. It will include actions and measures structured around three main axes: Circular culture; Design, Raw materials, Production and Distribution; and Consumption and Waste management.

In 2017, the process of drawing up the Circular Economy Strategy for the Region of Murcia began, and it is expected to enter into force in 2019. With measures to transform the production systems of Murcian companies and change consumption habits in order to use resources more efficiently by 2025. All this is expected to create 2,000 green jobs.

Two of the main challenges included in the summary document of the review of the *Application of the environment policy* made by the European Commission in 2019 are focused on waste and water management. Its assessment highlights the need to improve waste management, which remains a challenge despite progress in the transition to a circular economy. According to the report's forecasts, Spain cannot achieve the EU objective of recycling 50 % of municipal waste in 2020.

Estimated data of 2017 showed a general recycling rate of 34 % (including recycling and composting) with great differences in the recycling rates between autonomous communities. The same report stressed the need to boost investments in infrastructure to improve water management (waste water treatment, reduction of losses in networks and optimization of water supply, among others).

2.4.2 WASTE AND CIRCULAR, LOW-CARBON ECONOMY

This situation is even more demanding with the new targets of preparation for reuse and recycling for municipal waste set in the framework of the general EU circular economy policy proposed by the European Commission and forming part of the circular economy legislative package: 55 % by 2025, 60 % by 2030 and 65 % by 2035.

Specifically, the new recycling rates established for packaging waste to be used in monitoring progress towards the circular economy are as follows:

Before	All packages	Plastic	Wood	Ferrous metals	Aluminum	Glass	Paper and cardboard
2025	65 %	50 %	25 %	70 %	50 %	70 %	75 %
2030	70 %	55 %	30 %	80 %	60 %	75 %	85 %

Although this situation must be improved, it offers a positive view in terms of waste generation. In 2017, with an estimate of 462 kg/inhabitant, Spain ranked 15th among the EU-28 countries in the generation of municipal waste per inhabitant. Since 2011, Spain generates less municipal waste per inhabitant than the EU-28. In the same sense, Spain contributed 8.7 % of the total municipal waste produced in the EU-28 in 2017, a contribution that was 9.4 % in 2010. It is necessary to improve aspects of its management since the estimated data from 2017 show that still 53.6 % of municipal waste was deposited in landfill.

Since 2005 there has been an annual increase in recycling and recovery rates (including incineration with energy recovery) of packaging waste. It is only in 2015 and 2017 that decreases can be seen, although these have always been above the planned targets.

In recent years there have been improvements in "energy productivity" (with €8.3 of GDP per unit of gross energy used in 2017, a figure that represents an increase of 25.8 % since 2000), in "national consumption of materials" (there has been a significant reduction of 50 % since 2008 with one-off increases in 2014, 18,187.3 million in 2017) and in "environmental employment", which between 2014 and 2017 has increased by 13 % (reaching a total of 273,986 full-time equivalent jobs in 2017). With regard to "environmental taxes", Spain contributed in 2017 5.8 % of what was collected in the EU-28 (sixth country with the highest contribution). The collection of environmental taxes in 2017 represented 1.8 % of our country's GDP; in 2000, this figure was 2.1 %.

The Empleaverde Programme is an initiative of the Ministry for Ecological Transition (MITECO) developed through the Biodiversity Foundation, aimed at promoting the employment improvement, entrepreneurship and the environment by developing sustainable economic activities. It is co-financed by the European Social Fund and promotes a transition to a low-carbon, circular, sustainable and resource-efficient economy.

In 2019 the campaign invested €9.4 million for projects aimed at promoting the ecological transition through green jobs (in sustainable production and consumption patterns with environmental and social benefits) and blue jobs (sustainable development in the oceans). Of this amount, 90 % may be used in the territories involved in the energy transition, mainly in coal mining regions. The previous year, 8.9 million Euros were earmarked and 67 million Euros are expected to be earmarked by 2023.

One of the instruments that will undoubtedly be able to measure the involvement of the business sector in the Spanish Circular Economy Strategy is to implement an Environmental Management System. The Community Environmental Management and Audit System (EMAS) promoted by the EU becomes a tool of the circular economy, by giving added value to companies for the commitment they make to environmental improvement by registering and making their environmental statement public.

2.4.2 WASTE AND CIRCULAR, LOW-CARBON ECONOMY

EMAS
VERIFIED ENVIRONMENTAL MANAGEMENT

Performance,
Credibility,
Transparency

The Commission's *Work Programme for 2018* (COM (2017) 650 final) sets out the objective that all plastic packages should be recyclable by 2030.

The European Ecolabel is an important voluntary tool to help businesses and consumers improve their environmental performance. Therefore, MITECO has promoted the use of eco-labelled products in the Public Ecological Procurement Plan of the General State Administration, *its autonomous bodies and the Social Security management bodies (2018-2025)* in those categories for which compliance criteria are established.

Spain also continues to be one of the leaders in Europe in the number of eco-label licences after France, Italy and Germany. In 2018 the number of Spanish eco-label licences was estimated at 187, with a large production of green products in the field of multi-purpose cleaners, hand dishwashers, paints and varnishes and tissue paper.

2.4.2 WASTE AND CIRCULAR, LOW-CARBON ECONOMY

Municipal waste generation

The indicator expresses the amount of municipal waste produced per inhabitant expressed in kg per inhabitant. Municipal waste means waste produced by households, including other waste from similar sources (shops, offices and public institutions) and collected by or on behalf of municipal authorities and disposed of through the waste management system.

Justification

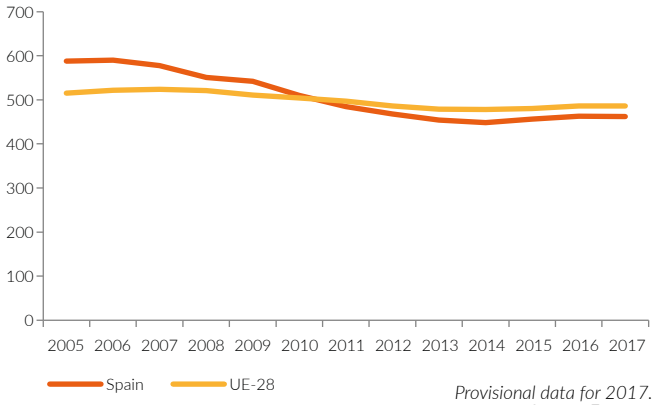
Waste prevention is the first step in the waste hierarchy, as the preferred option prior to any management operation. This approach of the Framework Directive and Law 22/2011, on waste and contaminated soils, is reinforced by the 2020 Strategy, which is aimed at changing the current resource-intensive economy to a new growth model based on its efficient use preceded by its lesser generation.

The indicator allows us to monitor priority goal 2 of the 7th EAP and Goal 12 of the SDG.

In 2015 the downward trend in waste generation per inhabitant in Spain was broken, a circumstance that also occurred in the EU-28. However, in the period 2010-2017, the reduction in waste generated per inhabitant was 9.4 %, which is higher than the European average of 3.6 %. In 2017, the generation of waste per inhabitant in Spain decreased by 0.22 %.

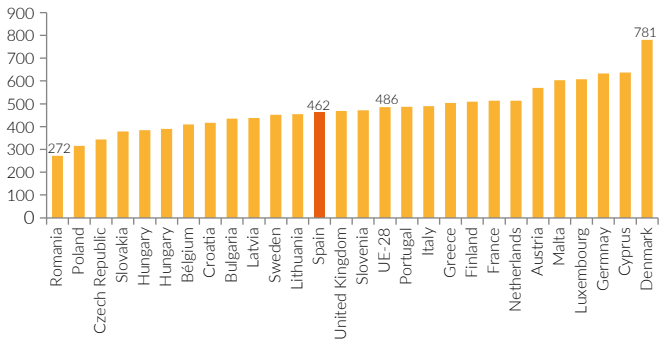
Since 2011, Spain generates less municipal waste per inhabitant than the EU-28 average. In 2017, with 462 kg/inhab (estimated data), Spain ranked 15 among the countries of EU-28. In the same year the difference with the average waste per inhabitant generated in the EU-28 was 24 kg, very similar to that of previous years.
Spain contributed in 2017 8.7 % of total municipal waste generated in the EU-28. Such contribution was 9.4 % in 2010. In both cases, it ranked fifth, after Germany, France, the United Kingdom and Italy.

Municipal waste generation (kg/inhab)



Provisional data for 2017.
Source: Eurostat

Municipal waste generation (kg/inhab) Year 2017



Provisional data for 2017.
Ireland's information is not included.
Source: Eurostat

Trend analysis

WASTE GENERATION	TREND 2010-2017	PAST YEAR TREND	OBJECTIVES ACT 22/2011 OF WASTE AND CONTAMINATED SOILS.	OBJECTIVES OUTLOOK
Generation of waste per inhabitant.			The quantitative prevention target set in the Law 22/2011,of 28 de july, on waste and contaminated soil is a reduction of 10% by 2020, compared to 2010.	

Source: Eurostat. Municipal waste by waste management operations [env_wasmun]
Consult on: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=env_wasmun&lang=en

2.4.2 WASTE AND CIRCULAR, LOW-CARBON ECONOMY

Urban waste treatment

The indicator shows the amount of municipal waste treated by landfill, incineration with energy recovery, material recycling and composting (includes anaerobic digestion of biodegradable waste).

Municipal waste means waste mainly produced by households, including other waste from similar sources (shops, offices and public institutions) and collected by or on behalf of municipal authorities and disposed of through the waste management system.

Justification

Disposal of waste into landfill sites involves a loss of resources (both materials and energy). It generates a pressure on the environment derived from leachate, atmospheric emissions and land occupation that can contaminate water, soil, generate odours, contribute to climate change and deteriorate the landscape. An efficient economy in the use of resources minimizes the dumping of waste in favour of their recovery, hence the importance of providing information to monitor their management.

The indicator allows us to monitor priority goal 2 of the 7th EAP and Goal 12 of the SDG.

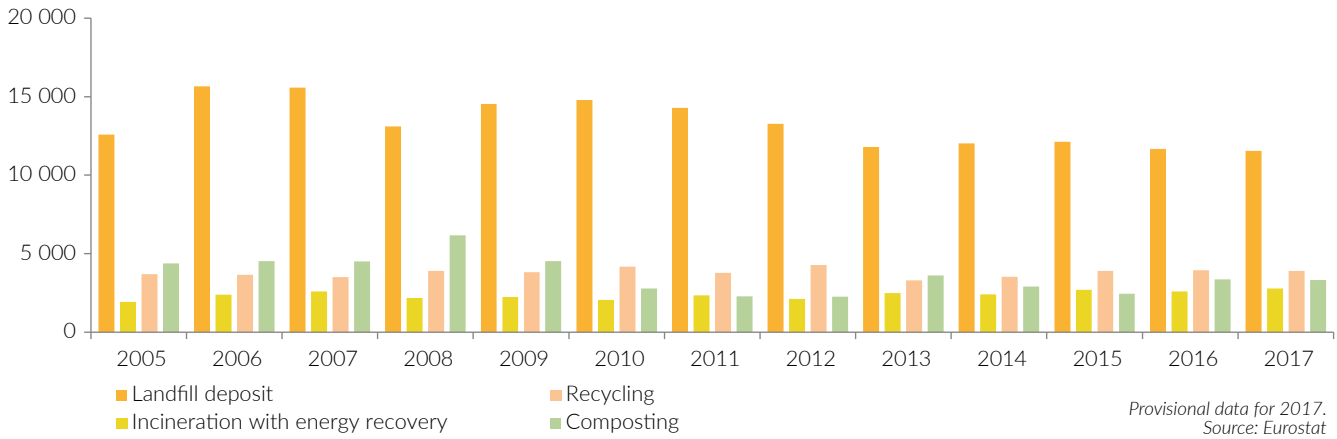
In 2017 (forecast) 53.6 % of municipal waste generated in Spain was taken to landfills. Although there has been a reduction in the use of this treatment (22 % between 2010 and 2017), the quantities discharged are still far from the objective of not exceeding 35 % established in the State Waste Management Framework Plan (PEMAR) 2016-2022.

In the same year, incineration with energy recovery accounted for 13 % of waste destination (estimated), approaching the 15 % value foreseen in the PEMAR. There is a positive trend with growth rates since 2010 of 36 % which in 2017 was quite important, reaching 7.4 %.

The quantities of waste prepared for reuse or recycled exceed 33 % (18,1 % material recycling and 15,4 % composting and anaerobic digestion), and this type of management needs to be increased towards the 50 % target of Community legislation or state law.

Per inhabitant, Spain was the sixth country in the EU-27 with the highest amount of waste deposited in landfill sites (248 kg/inhab) in 2017. On the contrary, it is one of the countries which incinerates less waste with energy recovery, ranking sixteenth.

Municipal waste treatment (1000 t)



Provisional data for 2017.
Source: Eurostat

Trend analysis

PROCESSING ALTERNATIVE	TREND 2010-2017	PAST YEAR TREND	GOALS OF THE STATE FRAMEWORK PLAN FOR WASTE PROCESSING (PEMAR) 2016-2022	OBJECTIVES OUTLOOK
Landfill	●	●	Limit the total discharge of generated municipal waste to 35 % by 2020.	●
Incineration	●	●	By 2020, energy recovery could reach 15 % of the municipal waste generated.	●
Preparation for re-use and recycling	●	●	Reach 50 % of preparation for re-use and recycling by 2020.	●

Source: Eurostat. Municipal waste by waste management operations [env_wasmun]
Consult on: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=env_wasmun&lang=en

2.4.2 WASTE AND CIRCULAR, LOW-CARBON ECONOMY

Packaging waste

The indicator shows the comparative rates of packaging waste processed by recycling and energy recovery. Both are calculated as the ratio of total generated package waste (in tonnes) to that recycled or subject to energy recovery.

Justification

The Waste Framework Directive establishes the principle of hierarchy in waste management options. After prevention, the best option is preparation for reusing, recycling and other manners of recovery (including energy recovery) and, finally, disposal (deposit at landfills, among others).

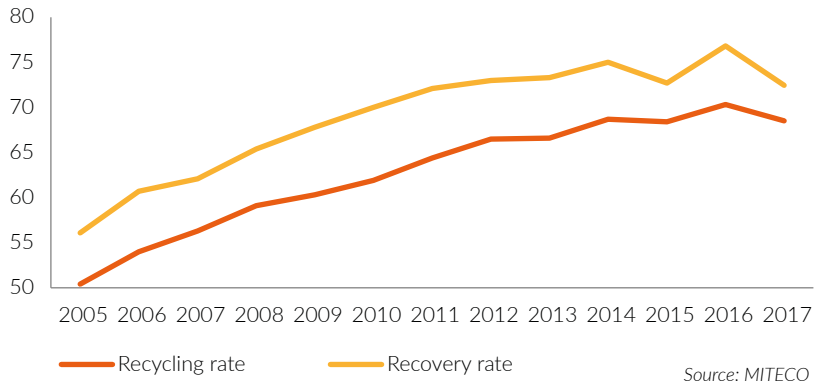
The indicator allows us to monitor priority goal 2 of the 7th EAP and Goal 12 of the SDG.

In recent years there has been an increase in the amount of packaging waste generated in Spain. Thus, in 2017 7,534,343.5 tonnes were registered, while in 2016 this amount was 7,230,653.6 tonnes, an increase of 4,2 %.

Recycling and recovery rates for packaging waste remain above the planned targets, although 2017 represents a break with the growth trend for packaging waste in Spain since 2005, with the exception of 2015, when these rates decreased as well. Thus, in 2016 the recycling rate was 70.3 %, while in 2017 this rate has fallen slightly to 68.5 %. Similarly, in 2016 the rate of recovery of packaging waste (with energy recovery) accounted for 76.8 %, while in 2017 the value of this rate fell to 72.5 %.

Paper, cardboard and glass seem to be the materials responsible for the declines experienced in both rates.

Global packaging recycling and recovery rate (%)



Source: MITECO

Recycling and recovery rate. Year 2017 (%)

MATERIAL	RECYCLING (%)	CHANGE (%)
Glass	72.25	72.25
Plastic	47.94	64.02
Paper and cardboard	74.61	74.61
Metals	85.08	85.08
Wood	67.46	78.42
Other	0.00	4.61
Total	**68.52**	**72.46**

Source: MITECO

Trend analysis

PACKAGING WASTE	TREND 2010-2017	PAST YEAR TREND	OBJECTIVES ACT 22/2011 OF WASTE AND POLLUTED SOIL AND STATE FRAMEWORK PLAN FOR WASTE MANAGEMENT (PEMAR) 2016-2022.	OBJECTIVES OUTLOOK
Recycling rate	●	●	The objective of Law 11/1007 to be met since 2008: Recycling of at least 55 % and a maximum of 80 % PEMAR quantitative objective: 70 % to be achieved in 2020	● ●
Recovery rate	●	●	The objective Act 22/2011 to be met since 2008: Recovery (including recycling and incineration of waste with energy recovery) of a minimum of 60 %.	●

Source: Data provided by the General-Subdirectorate for Waste. Directorate General of Biodiversity and Environmental Quality Ministry for Ecological Transition

2.4.2 WASTE AND CIRCULAR, LOW-CARBON ECONOMY

Energy productivity

This indicator shows the economic wealth produced (measured as Gross Domestic Product-GDP) per unit of gross domestic energy consumption. The gross internal consumption of energy is the consumption of primary energy plus the oil used for non-energy purposes. This ratio is provided for the average of the EU-28 countries and for Spain.

Justification

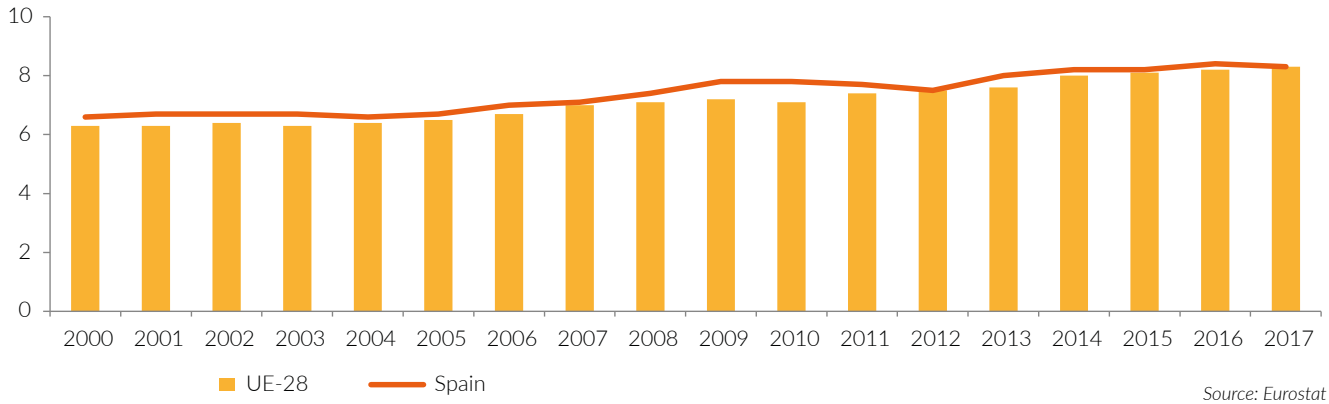
The amount of economic wealth produced per each unit of energy consumed is a key variable for monitoring the environmental efficiency of the economic system. This is one of the indicators used for monitoring the Sustainable Development Goals (SDG) of the EU. It is specifically used for goals 7 and 12.

It also contributes to the monitoring of the 2020 Europe Strategy and the 7th EAP regarding the increase of energy efficiency.

In 2017, Spain generated an average GDP of €8.3 per unit of gross energy used (measured in kilograms of oil equivalent). Since 2000, when energy productivity was 6.6 €/kgoe, the trend has been positive with an increase of 25.8 %, although slight decreases can be observed in specific years.

This trend has been common in the EU, where a total of 20 Member States have shown higher growth than Spain in their energy productivity over the same period. In this European context, Spain ranked 10th with energy productivity, now measured in purchasing power parity (for comparison between countries) of €9.3/kgoe, above the EU average of €8.9/kgoe.

Energy productivity (€/kgoe)



Source: Eurostat

The *Europe 2020 Strategy* has been the EU's growth and employment agenda in this decade, promoting intelligent, sustainable and inclusive growth among the elements to improve the European economy, its competitiveness and productivity, all within a framework of environmental sustainability, too.

The targets set for climate change and energy included a 20 % increase in energy efficiency (also a 20 % increase in renewables and a 20 % reduction in 1990 GHG emissions). Energy productivity is a way for assessing energy efficiency as it allows us to track how more economic growth is generated by each unit of energy consumed.

In the November 2016 *Clean Energy Package for all Europeans*,, the European Commission reviewed the EU energy efficiency target by creating a binding EU target to have it increase to 30 % by 2030.

Source: Eurostat. Energy productivity (sdg_07_30).
https://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=sdg_07_30

2.4.2 WASTE AND CIRCULAR, LOW-CARBON ECONOMY

Total Material Requirement

Annual total amount of materials consumed in Spain. In addition to the variable National Consumption of Materials (NCM), the indicator includes two of the main ratios derived from it: Intensity per inhabitant and Productivity. The indicator is shown as an index (2008=100).

Justification

The consumption of natural resources is one of the basic components of environmental accounting. Reducing the consumption of non-renewable materials and balancing the share of renewables ones is the basis for sustainable development.

The NCM allows the resource productivity to be estimated, one of the main indicators of the total established, to assess "resource efficiency". In this sense, the consumption of resources is more efficient as far as the increase in economic wealth is produced with an increasingly lower consumption of resources. When this happens, we say that there is a disengagement between the use of materials and economic growth.

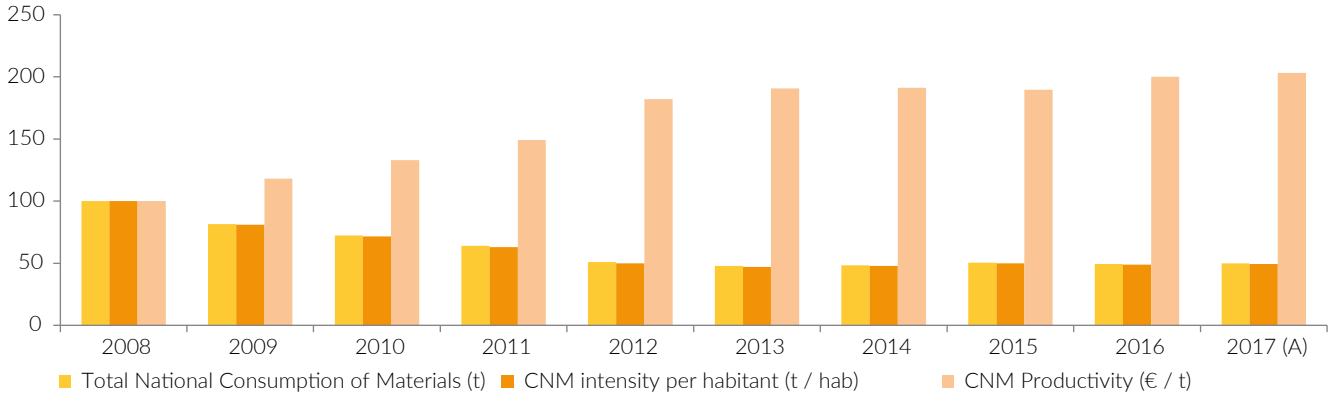
The indicator allows allows to follow the Europe 2020 strategy, the 7th EAP and the SDG to be monitored.

The NCM of the Spanish economy reached 406.4 million tonnes in 2017, 1.5 % more than in 2016. However, since 2008 there has been a significant reduction of 50 %, with only one-off increases in 2014, 2015 and, as has just been mentioned, in 2017. In 2017, of all the national extraction, almost 60 % were non-metallic minerals and 36.6 % biomass. On the other hand, 54 % of imports were fossil fuels, primary and processed, and almost 20 % were biomass.

Spain consumed 5.9 % of all materials consumed in the EU-28. Only six countries consumed more than Spain and among the seven they accounted for almost 70 % of total consumption.

Per inhabitant, Spain consumed 8.7 tonnes of materials, 50.6 % less than the tonnes consumed in 2008 (17.7 t/inhab) and 1.3 % more than in 2016. It placed us as the third country with the lowest consumption rate, since only Italy, with 8.2 t/inhab, and the United Kingdom, also with 8.7 t/inhab, offered lower ratios in 2017. The European average was 13.4 t/inhab, with Finland being the country with the highest relative consumption, 33 t/inhab.

National Consumption of Material Goods



A: Advance
Source: INE

Resource productivity measures the amount of Euros generated in the economy per unit of material resources consumed. Only three countries had a resource productivity greater than the Spanish one in 2017. It should be borne in mind that the decline in GDP during the crisis affected manufacturing industries and construction (material-intensive economic sectors) to a greater extent. Another kind of sectors, such as services, were less affected.

In Spain, productivity of materials was 2,805.1 Euros per tonne consumed, and accounted for an increase of 1.5 %, compared to 2016. In 2008, this productivity was lower than half, with 1,380.5 €/t.

Source: INE. Main indicators of material flows. Consult on INEbase/Agricultura y medio ambiente/Cuantas ambientales/Cuenta de flujo de materiales/Principales indicadores de flujos de materiales. https://www.ine.es/dynt3/inebase/es/index.htm?padre=4342&capsel=4344

2.4.2 WASTE AND CIRCULAR, LOW-CARBON ECONOMY

Environmental taxes

The indicator shows the annual value, expressed in millions of Euros and as a percentage of the total Gross Domestic Product, of the amount collected as environmental taxes.

Calculation includes taxes which have a tax base that consists of a physical unit (or similar) of a certain material that has a negative impact –verified and specific– on the environment. They are distributed in taxes on energy, transport and pollution and resources.

Justification

The monitoring of environmental taxes is an indispensable tool for analysing the interrelationships between the environment and the economy in general and, in particular, for assessing sustainable development and for monitoring environmental policy actions at national and international level.

This indicator allows for the 7th EAP and the SDG to be monitored.

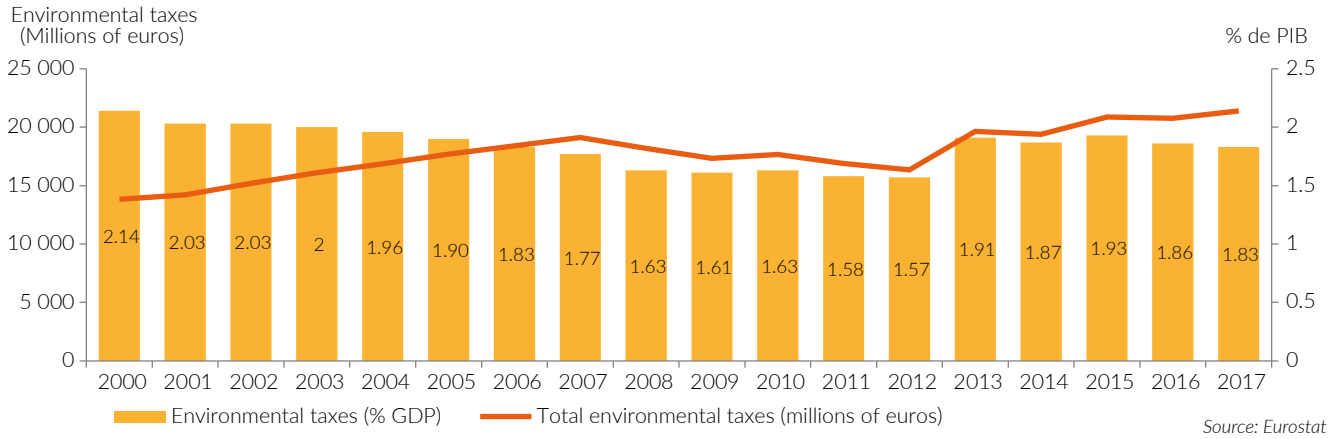
In 2017, environmental taxes came up to 21,382 million Euros, accounting for 8.2 % of Spain's total taxes collected that year. In 2016, the figure for environmental taxes was 20,754, which has led to an increase of 3 % in the last year, a growth rate lower than 1.1 % in the EU-28 average.

Classification of environmental taxes into three categories had the following outcome in 2017: Taxes on energy: 82.9 %; Taxes on transportation: 12.7 %; Taxes on pollution and resources: 4.4 %. The evolution of the contribution of the different types of environmental taxes over the last eight years has remained stable in relation to those of energy, while there has been a decline in the weight of transport taxes in favour of an increase in those relating to pollution and resources. The 2017 balance shows this trend experiences increases of 3.3 % in energy taxes, 2.6 % in pollution and resource taxes and 1.5 % in transport taxes.

As for the distribution of the payment of taxes, in 2017, 51.2 % was paid by households as final consumers (mainly by transport and energy), while the productive sectors (covering all branches of activity including public administration) assumed the remaining 48.8 % (mainly due to taxes on pollution and resources and also on energy).

Within the European context, Spain contributed 5.8 % of the total environmental taxes in 2017. Only five countries (Germany, Italy, United Kingdom, France and the Netherlands) contributed more, the six of them reaching 73.6 % of the total environmental taxes collected in the EU-28.

Environmental taxes in Spain. Total and as a % of GDP



Source: Eurostat

In Spain the ratio of environmental taxes to GDP is relatively low, with 1.83 % in 2017. This percentage is lower than the 3.4 % existing in Greece and places us as the fifth country with the lowest percentage, only surpassing Germany, Slovakia, Ireland and Luxembourg.

Source: Eurostat. Environmental tax revenues [env_ac_tax]
Consultation at: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=env_ac_mfa&lang=en

2.4.2 WASTE AND CIRCULAR, LOW-CARBON ECONOMY

Environment protection expenditure

The indicator sets out the total amount of economic resources used in Spain for the protection of the environment.

Justification

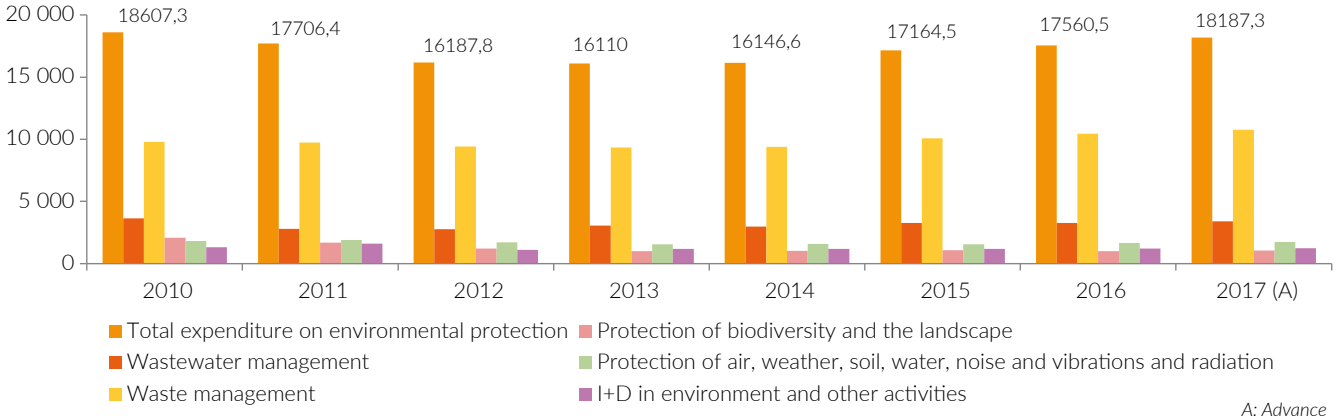
The prevention, reduction and disposal of pollution and any other degradation of the environment together with measures to restore the environment after its degradation are the basis for sustainable development. Investing in these activities is a way to quantify the level of involvement of the administrative, political, economic and social systems.

This indicator allows for the SDG (for instance, 11 and 17 goals) and the 7th EAP to be monitored.

Total expenditure on environmental protection has been on an upward trend since 2013, when it fell to its minimum, 16.11 billion Euros. Now it has experienced four years in a row with increases reaching a total of 18,187.3 million Euros in 2017.

In the distribution of total expenditure in 2017, "Waste management" services stand out as the sector with the greatest weight, representing 59.2 % of total expenditure. In second place are the "Wastewater Management" services, which accounted for 18.7 % in 2017. The third position is for 'Protection of air, climate, soil, water, noise and vibration and radiation' with a contribution to total expenditure of 9.5 %. The "R&D in environment and other activities" with 6.8 % and "Protection of biodiversity and landscape" with 5.8 % were the environmental protection activities with the lowest weight in total expenditure.

Environment protection expenditure (Millions of Euros)



A: Advance
Source: INE

However, in the last year the services of "Protection of biodiversity and landscape" have experienced the greatest increase in expenditure on the environment, followed by those on "Protection of air, climate, soil, water, noise and vibrations and radiation" and "Wastewater management", both with growths of 4.5 % and 4.2 % respectively between 2016 and 2017.

Source: National Institute of Statistics, 2019. Environmental protection expenditure account. Consult at: INEbase/Agricultura y medio ambiente/Cuentas ambientales/Cuenta de gasto en protección ambiental/Resultados/Resultados nacionales. Series 2010-2016 and advancement 2017/National environmental protection expenditure/ 1.1 National expenditure in environmental protection per area of environmental protection, percentage structure and year-on-year variation rate.

2.4.2 WASTE AND CIRCULAR, LOW-CARBON ECONOMY

Environment-related employment

The indicator shows the number of full-time jobs in environmental protection and natural resource management activities.

Justification

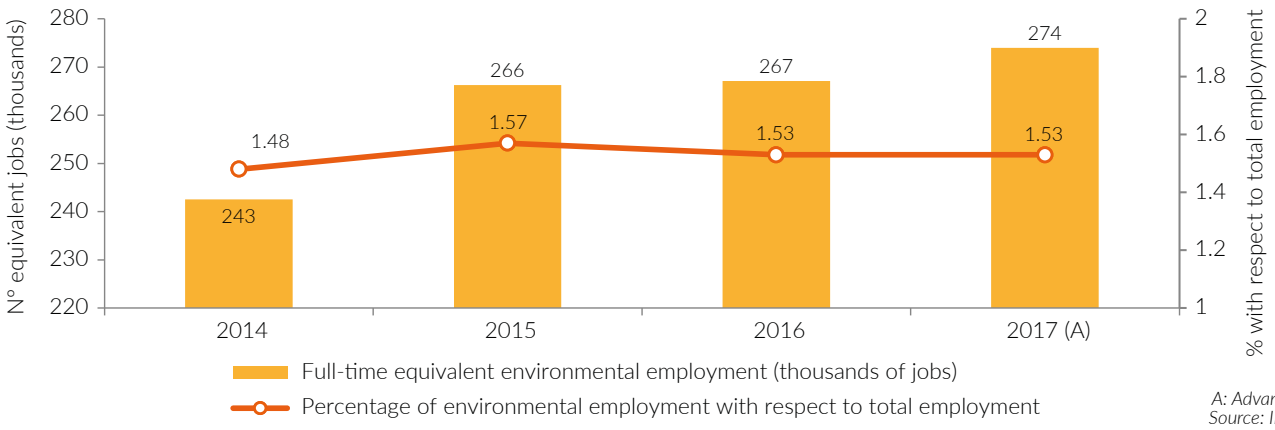
Environmental employment relates economic and social welfare aspects to the environment. It is one of the basic tools for achieving an ecological transition according to the principles of sustainable development (included in the Europe 2020 Strategy and other initiatives), as well as for moving towards a resource-efficient and low-emission economy.

This indicator allows for the 7th EAP and the SDG to be monitored.

Contribution of environmental activites to total employment (measured as equivalent, full-time jobs) was close to 1.5 %. Between 2014 and 2017 the number of jobs has increased by 13 %, going from 242,576 to 273,986 full-time equivalent jobs. The sectors of "Extractive industries and manufacturing" and "Agriculture, livestock, forestry and fishing" have increased the most (35.2 % and 24.3 %, respectively). However, the greatest contribution to environmental employment in 2017 was that of the "Water supply, sanitation, waste management and decontamination" sector and the "Services sector", which together accounted for 63 % of all environmental employment in 2017.

Similarly, the activities linked to "Water supply, sanitation activities, waste management and decontamination", with 0.56 %, were the ones with the highest percentage of environmental employment out of the total of the activities of the "Services Sector", which generated 0.41 %.

Environmental Employment: No. of jobs and % of total jobs



A: Advance
Source: INE

In 2017, "Waste management" was the environmental domain that generated the highest amount of equivalent employment (33.8 % of the total), followed by the group "Protection against noise and vibrations; Protection fauna and flora; Protection against radioactivity; R&D and Others" (15.5 %) and "Protection and decontamination of soils, groundwater and surface water" (13.5 %).

On the other hand, "Air and climate protection", with only 2.4 % and "Wastewater management", with about 6.5 %, were the sectors of the National Classification of Economic Activities generating the lowest amount of environmental employment that year.

Source: Instituto Nacional de Estadística (Spanish National Statistical Office). Consultation on INEbase/Agricultura y medio ambiente/Cuentas ambientales/Cuenta de bienes y servicios ambientales/Resultados/Resultados nacionales. Series 2014-2016 and advance 2017/Principales resultados/1.4 Empleo equivalente a tiempo completo por sectores de actividad (CNAE 2009) y ámbitos y 3.1 Indicadores del sector de bienes y servicios ambientales por actividades económicas (CNAE 2009).

3. INFORMATION BY AUTONOMOUS COMMUNITY: BASIC DATA

- Introduction, descriptive files of autonomous communities and sources of information with methodological notes

3. INFORMATION BY AUTONOMOUS COMMUNITY: BASIC DATA

Introduction

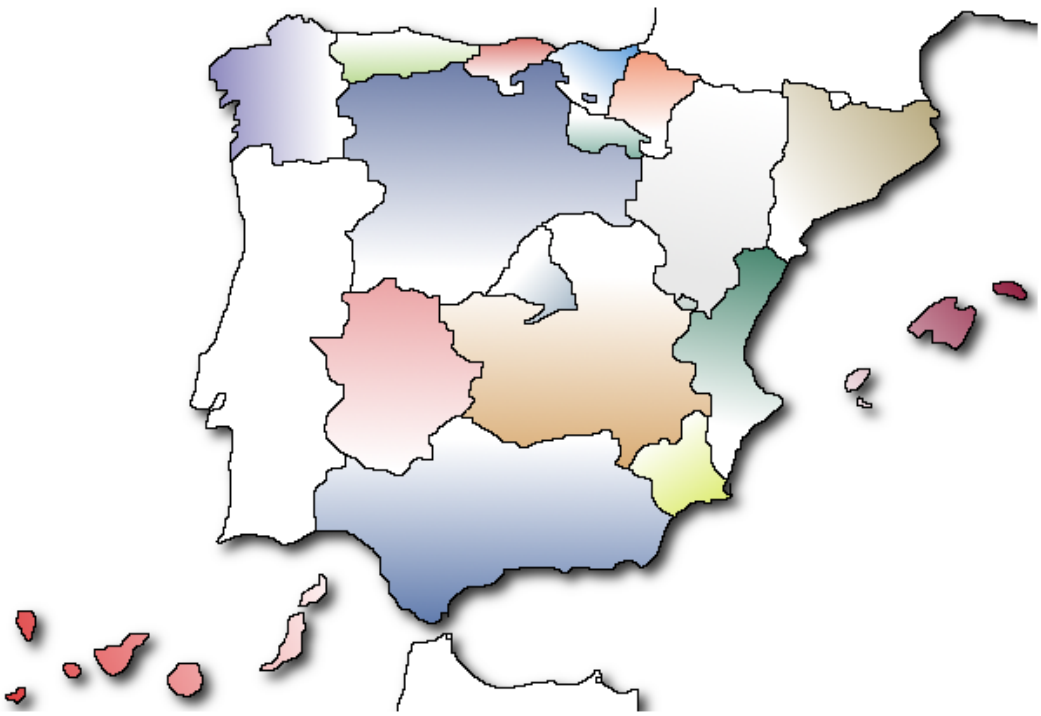
The third section of the Environmental Profile of Spain contains basic environmental information for the autonomous communities. This 2018 edition presents a new format, more condensed in content and presentation though maintaining the same idea of complementing the information presented under the indicators comprising the publication in this geographically organised format.

With regard to the previous publications, the main differences between this new edition are summarised in the following aspects:

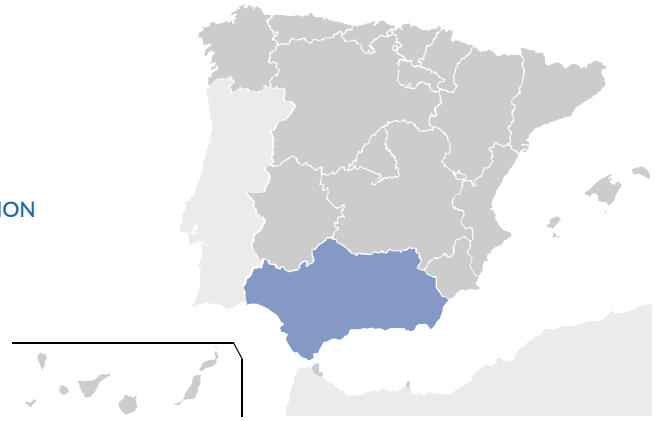
- More condensed, single-page descriptive file design.
- Groups together administrative, geographic and socio-economic information in a single block compared to the two-block structure of previous editions.
- Environmental information referring to the themes of nature, water, waste, air quality and energy. The sources are centres and bodies that have completed the aggregation and homogenisation of the information previously.
- Includes a third section relating to the reports on the state of the environment by autonomous community, including titles and access links and links to other environmental information of interest. Only two sections, unlike previous publications which also incorporated a third space with relevant data or information.

The Autonomous Community Focal Points of the EIONET Network (Environmental Information and Observation Network) complement the information on each autonomous community in relation to environmental reports and websites of greater environmental interest, verifying the data included in the file. This way, the participation of the EIONET Network in this initiative is consolidated. It must be borne in mind that this update to the structure and content of the report arose in part from the result of the meeting of the EIONET Network Spain at the end of November 2018, at which those present expressed a clear preference for more summarised and compressed reports.

The sources of the information are detailed at the end of the package of descriptive files and specify not only the body that supplied the information but also the location of that body in the source and the link to access same.



ANDALUSIA



ADMINISTRATIVE, GEOGRAPHIC AND SOCIO-ECONOMIC INFORMATION

Statute of Autonomy: Organic Law 2/2007, of 19 March
Area: 87 596.97 km²
Length of coastline: 2 138.4 km (20.8 % of the Spanish total)
Population (2018): 8 inhabitants **/ Change 2017-2018 (%):** 0.1
Population density (2018): 95.7 inhabitants/km² (Spain: 92.3 inhabitants/km²)
Household income (2016): 11 589 €/inhabitant (Spain: 14 781 €/inhabitant)

Sectoral employment structure (% employed). Year 2018				
Scope	Agriculture	Construction	Industry	Services
Andalusia	8.3	6.4	9.2	76.1
Spain	4.2	6.3	14.0	75.5

GDP per capita (€/inhabitant)				
Scope	2005	2010	2015	2018
Andalusia	16 529	17 599	17 356	19 132
Spain	21 313	23 215	23 296	25 854

Sectoral structure of GVA (%) (2018 Estimate)				
Scope	Agriculture	Construction	Industry	Services
Andalusia	5.7	6.4	21.8	55.6
Spain	2.6	5.9	16.0	66.0

Unemployment rate %				
Scope	2006	2010	2015	2018
Andalusia	12.6	27.8	31.5	23.0
Spain	8.5	19.9	22.1	15.3

ENVIRONMENTAL INFORMATION

Nature: Protected land area (ha) (YEAR 2018)

Scope	Total protected land area (ha)		PA	NATURA 2000 NETWORK	MAB	RAMSAR	SPAMI
Andalusia	2 836 322.6	32.4 %	2 614 899.8	2 612 677.7	1 534 922.4	139 787.5	37 877.7
Spain	16 613 175.9	32.8 %	7 402 026.9	13 839 629.4	5 570 613.0	282 694.0	51 857.9

Nature: Forest fires (2018)

Scope	No. of events		Total forest area burned (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (< 1ha)	Fires (> 1 ha)		Wooded area	Scrubland and pastures	Total woody area	Total
Andalusia	520.0	137.0	3 266.2	1 206.6	1 977.8	1 206.6	0.0
Spain	5 154.0	1 989.0	25 162.4	4 739.0	16 745.4	21 484.5	3 678.0

Water: Consumption per inhabitant (litre/inhabitant/day)

Scope	2010	2011	2012	2013	2014	2016	2010-2016 (%)
Andalusia	142	139	127	120	126	129	-9.2
Spain	142	140	135	130	132	136	-4.2

Household waste (kg/inhabitant)

Scope	Total		Mixed waste		Paper and cardboard waste		Glass waste		Mixed containers and mixed packaging	
	2010	2016	2010	2016	2010	2016	2010	2016	2010	2016
Andalusia	573.0	498.0	526.2	465.8	13.5	10.8	9.8	11.7	10.7	10.1
Spain	523.6	471.0	416.5	381.3	31.5	21.7	17.3	16.2	13.8	12.7

Air: air quality in relation to the protection of human health.
For every pollutant, percentage of stations classified by range of legislated values (annual mean)

NO_2: annual mean concentration (µg/m³). Year 2017					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
40.8	43.3	5.3	9.2	1.3	76
PM10: annual mean concentration (µg/m³). Year 2017					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
0.0	17.6	47.1	35.3	0.0	51
PM2.5: annual mean concentration (µg/m3). Year 2017					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2016
0.0	45.8	16.7	29.2	8.3	24
O_3: maximum daily value of mobile eight-hour averages (µg/m³). Year 2017					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2016
5.5	63.6	30.9			55

Note: LET = Lower Evaluation Threshold; UET = Upper Evaluation Threshold; AVL = Annual Limit Value; LTT = Long-Term Target; TV = Target Value.

Energy: Production of electricity from renewable sources as % of total electricity production

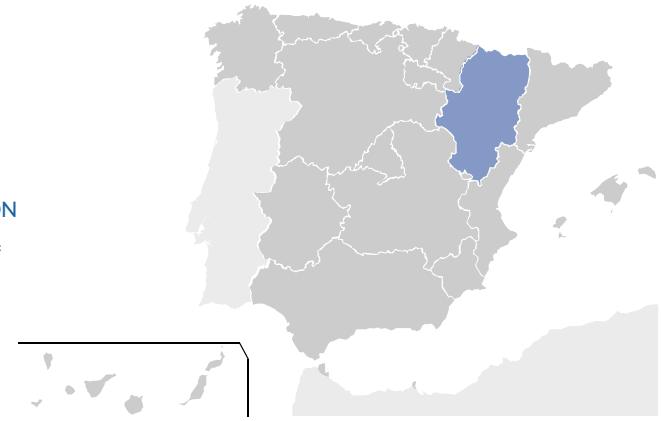
Scope	2011	2012	2013	2014	2015	2016	2017	2018
Andalusia	28.5	29.7	39.4	39.4	33.8	39.1	34.8	34.3
Spain	31.0	30.1	40.2	40.5	35.2	38.6	32.3	38.4

ENVIRONMENTAL REPORTS
Informe de medio ambiente de Andalucía. IMA (annual publication)
http://www.juntadeandalucia.es/medioambiente/site/ima

LINKS TO RECOMMENDED WEBSITES ON THE ENVIRONMENT
http://www.juntadeandalucia.es/medioambiente/site/portalweb/

https://www.agenciamedioambienteyagua.es/
https://www.agenciaandaluzadelaenergia.es/es
www.juntadeandalucia.es/medioambiente/site/web/rediam www.juntadeandalucia.es/medioambiente/rediam/indicadores_ambientales http://laboratoriorediam.cica.es/VisorRediam/
http://laboratoriorediam.cica.es/

ARAGON



ADMINISTRATIVE, GEOGRAPHIC AND SOCIO-ECONOMIC INFORMATION

Statute of Autonomy: Organic Law 8/82, of 10 August. Reform approved by virtue of Organic Law 5/2007, of 20 April
Area: 47 720.25 km²
Population (2018): 1 308 728 inhabitants / **Change 2017-2018 (%):** 0.0
Population density (2018): 27.4 inhabitants/km² (Spain: 92.3 inhabitants/km²)
Household income (2016): 15 882 €/inhabitant (Spain: 14 781 €/inhabitant)

Sectoral employment structure (% employed). Year 2018				
Scope	Agriculture	Construction	Industry	Services
Aragón	6.7	6.1	20.1	67.2
Spain	4.2	6.3	14.0	75.5

GDP per capita (€/inhabitant)				
Scope	2005	2010	2015	2018
Aragón	22 873	25 603	25 214	28 640
Spain	21 313	23 215	23 296	25 854

Sectoral structure of GVA (%) (2018 Estimate)				
Scope	Agriculture	Construction	Industry	Services
Aragón	5.7	6.4	21.8	56.6
Spain	2.6	5.9	16.0	66.0

Unemployment rate %				
Scope	2006	2010	2015	2018
Aragón	5.5	15.0	16.3	10.6
Spain	8.5	19.9	22.1	15.3

ENVIRONMENTAL INFORMATION

Nature: Protected land area (ha) (YEAR 2018)

Scope	Total protected land area (ha)		PA	NATURA 2000 NETWORK	MAB	RAMSAR	SPAMI
Aragon	1 414 123.5	29.6 %	168 264.1	1 361 299.2	117 265.3	16 700.9	0.0
Spain	16 613 175.9	32.8 %	7 402 026.9	13 839 629.4	5 570 613.0	282 694.0	51 857.9

Nature: Forest fires (2018)

Scope	No. of events		Total forest area burned (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (< 1ha)	Fires (> 1 ha)		Wooded area	Scrubland and pastures	Total woody area	Total
Aragón	175.0	51.0	214.8	30.9	183.9	214.8	0.0
Spain	5 154.0	1 989.0	25 162.4	4 739.0	16 745.4	21 484.5	3 678.0

Water: Consumption per inhabitant (litre/inhabitant/day)

Scope	2010	2011	2012	2013	2014	2016	2010-2016 (%)
Aragón	141	129	135	129	130	137	-2.8
Spain	142	140	135	130	132	136	-4.2

Household waste (kg/inhabitant)

Scope	Total		Mixed waste		Paper and cardboard waste		Glass waste		Mixed containers and mixed packaging	
	2010	2016	2010	2016	2010	2016	2010	2016	2010	2016
Aragón	448.1	401.7	367.2	350.5	23.8	19.1	17.3	13.6	9.2	12.1
Spain	523.6	471.0	416.5	381.3	31.5	21.7	17.3	16.2	13.8	12.7

Air: air quality in relation to the protection of human health.
For every pollutant, percentage of stations classified by range of legislated values (annual mean)

NO_2: annual mean concentration (µg/m³). Year 2017					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
35.7	28.6	35.7	0.0	0.0	14

PM10: annual mean concentration (µg/m³). Year 2017					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
0.0	69.2	30.8	0.0	0.0	13

PM2.5: annual mean concentration (µg/m³). Year 2017					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2016
20.0	20.0	60.0	0.0	0.0	5

O_3: maximum daily value of mobile eight-hour averages (µg/m³). Year 2017			
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)	No. of stations 2016
29.4	70.6	0.0	17

Note: LET = Lower Evaluation Threshold; UET = Upper Evaluation Threshold; AVL = Annual Limit Value; LTT = Long-Term Target; TV = Target Value.

Energy: Production of electricity from renewable sources as % of total electricity production

Scope	2011	2012	2013	2014	2015	2016	2017	2018
Aragón	38.6	43.1	57.0	53.1	50.7	54.2	44.6	56.3
Spain	31.0	30.1	40.2	40.5	35.2	38.6	32.3	38.4

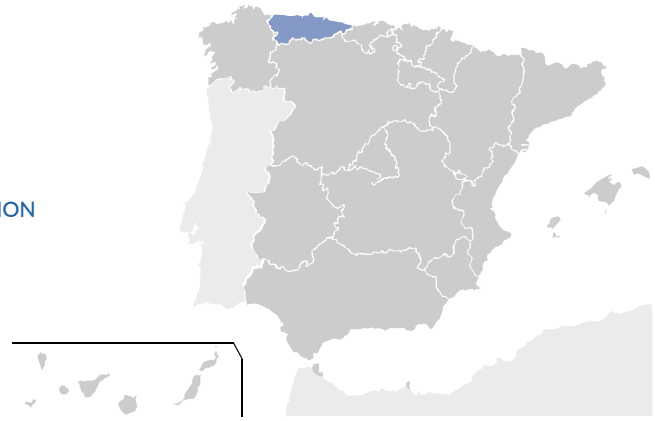
ENVIRONMENTAL REPORTS
https://www.aragon.es/-/informes-sobre-temas-ambientales

"Cambio climático y transición energética"
"La red natura 2000 como herramienta de oportunidad para el Desarrollo Sostenible"
"Educación ambiental: recuperar los valores ambientales"

Sistema de Indicadores Ambientales de Aragón (https://www.aragon.es/-/indicadores-ambientales)

LINKS TO RECOMMENDED WEBSITES ON THE ENVIRONMENT
https://www.aragon.es/temas/medio-ambiente
https://www.aragon.es/-/informacion-y-datos-ambientales

ASTURIAS



ADMINISTRATIVE, GEOGRAPHIC AND SOCIO-ECONOMIC INFORMATION

Statute of Autonomy: Organic Law 7/81, of 30 December.
Reform approved by virtue of Organic Law 1/1999, of 5 April.
Area: 10 602.46 km²
Length of coastline: 656.0 km (6.4 % of the Spanish total)
Population (2018): 1 028 244 inhabitants / **Change 2017-2018 (%):** -0.6
Population density (2018): 97.0 inhabitants/km² (Spain: 92.3 inhabitants/km²)
Household income (2016): 14 882 €/inhabitant (Spain: 14 781 €/inhabitant)

Sectoral employment structure (% employed). Year 2018				
Scope	Agriculture	Construction	Industry	Services
Asturias	4.4	5.8	14.3	75.5
Spain	4.2	6.3	14.0	75.5

GDP per capita (€/inhabitant)				
Scope	2005	2010	2015	2018
Asturias	18 781	21 250	20 351	23 087
Spain	21 313	23 215	23 296	25 854

Sectoral structure of GVA (%) (2018 Estimate)				
Scope	Agriculture	Construction	Industry	Services
Asturias	1.4	6.8	21.5	60.8
Spain	2.6	5.9	16.0	66.0

Unemployment rate %				
Scope	2006	2010	2015	2018
Asturias	9.2	15.9	19.1	13.6
Spain	8.5	19.9	22.1	15.3

ENVIRONMENTAL INFORMATION

Nature: Protected land area (ha) (YEAR 2018)

Scope	Total protected land area (ha)		PA	NATURA 2000 NETWORK	MAB	RAMSAR	SPAMI
Asturias	352 948.4	33.3 %	235 824.5	285 648.9	265 230.4	2 214.3	0.0
Spain	16 613 175.9	32.8 %	7 402 026.9	13 839 629.4	5 570 613.0	282 694.0	51 857.9

Nature: Forest fires (2018)

Scope	No. of events		Total forest area burned (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (< 1ha)	Fires (> 1 ha)		Wooded area	Scrubland and pastures	Total woody area	Total
Asturias	357.0	281.0	2 054.6	196.6	1 781.7	1 978.3	76.4
Spain	5 154.0	1 989.0	25 162.4	4 739.0	16 745.4	21 484.5	3 678.0

Water: Consumption per inhabitant (litre/inhabitant/day)

Scope	2010	2011	2012	2013	2014	2016	2010-2016 (%)
Asturias	156	150	128	122	134	150	-3.8
Spain	142	140	135	130	132	136	-4.2

Household waste (kg/inhabitant)

Scope	Total		Mixed waste		Paper and cardboard waste		Glass waste		Mixed containers and mixed packaging	
	2010	2016	2010	2016	2010	2016	2010	2016	2010	2016
Asturias	574.0	518.7	418.9	381.7	86.6	59.8	29.4	36.4	9.6	10.4
Spain	523.6	471.0	416.5	381.3	31.5	21.7	17.3	16.2	13.8	12.7

Air: air quality in relation to the protection of human health.
For every pollutant, percentage of stations classified by range of legislated values (annual mean)

NO_2: annual mean concentration (µg/m³). Year 2017					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
18.2	63.6	18.2	0.0	0.0	22
PM10: annual mean concentration (µg/m³). Year 2017					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
0.0	18.2	68.2	9.1	4.5	22
PM2.5: annual mean concentration (µg/m³). Year 2017					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2016
0.0	77.8	22.2	0.0	0.0	9
O_3: maximum daily value of mobile eight-hour averages (µg/m³). Year 2017					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2016
42.9	57.1	0.0			21

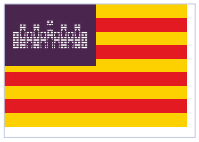
Note: LET = Lower Evaluation Threshold; UET = Upper Evaluation Threshold; AVL = Annual Limit Value; LTT = Long-Term Target; TV = Target Value.

Energy: Production of electricity from renewable sources as % of total electricity production

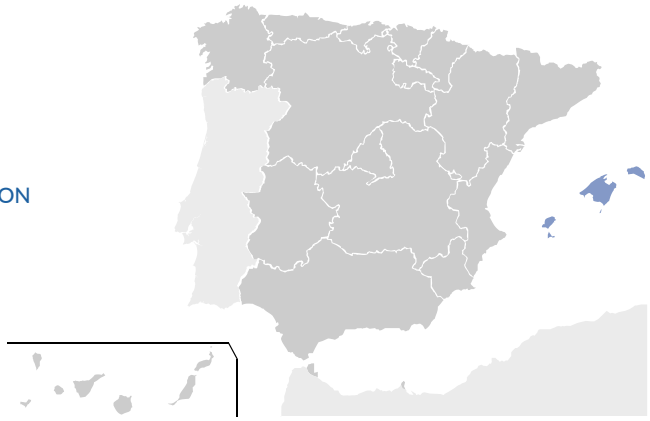
Scope	2011	2012	2013	2014	2015	2016	2017	2018
Asturias	20.0	18.4	28.4	26.8	17.2	25.6	15.4	28.1
Spain	31.0	30.1	40.2	40.5	35.2	38.6	32.3	38.4

ENVIRONMENTAL REPORTS
Sistema de Información Ambiental (Indicadores para el seguimiento y evaluación del estado del medio ambiente y la sostenibilidad en nuestra región):
https://www.asturias.es/portal/site/medioambiente/m.4691a4f57147e2c2553cbf10a6108a0c/?vgnextoid=eaddffae3867b210VgnVCM10000097030a0aRCRD&i18n.http.lang=es

LINKS TO RECOMMENDED WEBSITES ON THE ENVIRONMENT
https://www.asturias.es/portal/site/medioambiente/menuitem.902b26b36a5e1f63e7cc2a20a6108a0c/?vgnextoid=3cfda5c7be9fa110VgnVCM1000006a01a8c0RCRD&i18n.http.lang=es



BALEARIC ISLANDS



ADMINISTRATIVE, GEOGRAPHIC AND SOCIO-ECONOMIC INFORMATION

Statute of Autonomy: Organic Law 2/83, of 25 February (BOE [Spanish State Gazette] 51, of 1 March 1983), drafted according to Organic Act 1/2007, of 28 February
Area: 4 991.66 km²
Length of coastline: 1 330 km (12.9 % of the Spanish total)
Population (2018): 1 128 908 inhabitants / **Change 2017-2018 (%):** 1.2
Population density (2018): 226.2 inhabitants/km² (Spain: 92.3 inhabitants/km²)
Household income (2016): 15 882 €/inhabitant (Spain: 14 781 €/inhabitant)

Sectoral employment structure (% employed). Year 2018				
Scope	Agriculture	Construction	Industry	Services
Balearic Islands	1.6	8.7	7.2	82.5
Spain	4.2	6.3	14.0	75.5

GDP per capita (€/inhabitant)				
Scope	2005	2010	2015	2018
Balearic Islands	23 677	24 084	24 446	26 764
Spain	21 313	23 215	23 296	25 854

Sectoral structure of GVA (%) (2018 Estimate)				
Scope	Agriculture	Construction	Industry	Services
Balearic Islands	0.7	6.3	6.3	77.2
Spain	2.6	5.9	16.0	66.0

Unemployment rate %				
Scope	2006	2010	2015	2018
Balearic Islands	6.4	20.1	17.3	11.5
Spain	8.5	19.9	22.1	15.3

ENVIRONMENTAL INFORMATION

Nature: Protected land area (ha) (YEAR 2018)

Scope	Total protected land area (ha)		PA	NATURA 2000 NETWORK	MAB	RAMSAR	SPAMIs
Balearic Islands	178 403.6	35.6 %	76 160.5	115 437.1	70 087.9	3 169.4	1 315.1
Spain	16 613 175.9	32.8 %	7 402 026.9	13 839 629.4	5 570 613.0	282 694.0	51 857.9

Nature: Forest fires (2018)

Scope	No. of events		Total forest area burned (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (< 1ha)	Fires (> 1 ha)		Wooded area	Scrubland and pastures	Total woody area	Total
Balearic Islands	69.0	3.0	27.3	22.8	3.8	26.6	0.7
Spain	5 154.0	1 989.0	25 162.4	4 739.0	16 745.4	21 484.5	3 678.0

Water: Consumption per inhabitant (litre/inhabitant/day)

Scope	2010	2011	2012	2013	2014	2016	2010-2016 (%)
Balearic Islands	120	124	132	141	124	134	11.7
Spain	142	140	135	130	132	136	-4.2

Household waste (kg/inhabitant)

Scope	Total		Mixed waste		Paper and cardboard waste		Glass waste		Mixed containers and mixed packaging	
	2010	2016	2010	2016	2010	2016	2010	2016	2010	2016
Balearic Islands	741.4	740.2	640.8	631.1	22.6	39.2	19.4	32.6	13.3	18.8
Spain	523.6	471.0	416.5	381.3	31.5	21.7	17.3	16.2	13.8	12.7

Air: air quality in relation to the protection of human health.
For every pollutant, percentage of stations classified by range of legislated values (annual mean)

NO_2: annual mean concentrations (µg/m³). Year 2017					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
82.4	11.8	0.0	5.9	0.0	17
PM10: annual mean concentration (µg/m³). Year 2017					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
0.0	87.5	12.5	0.0	0.0	16
PM2.5: annual mean concentration (µg/m³). Year 2017					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2016
0.0	100.0	0.0	0.0	0.0	3
O_3: maximum daily value of mobile eight-hour averages (µg/m³). Year 2017					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2016
22.2	72.2	5.6			18

Note: LET = Lower Evaluation Threshold; UET = Upper Evaluation Threshold; AVL = Annual Limit Value; LTT = Long-Term Target; TV = Target Value.

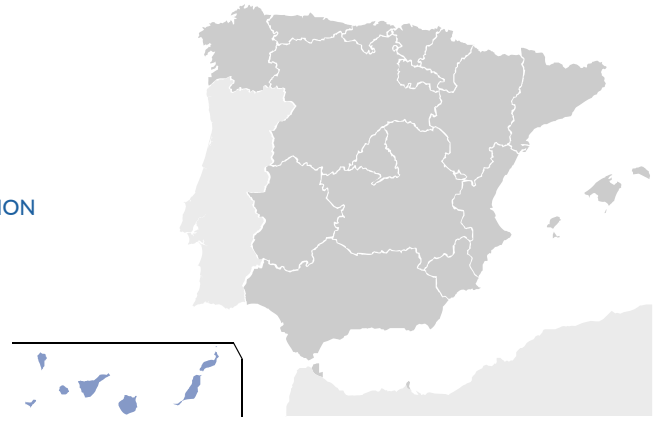
Energy: Production of electricity from renewable sources as % of total electricity production

Scope	2011	2012	2013	2014	2015	2016	2017	2018
Balearic Islands	4.0	4.7	5.5	6.0	6.3	5.6	5.6	5.3
Spain	31.0	30.1	40.2	40.5	35.2	38.6	32.3	38.4

ENVIRONMENTAL REPORTS
Estado del Medio Ambiente en las Islas Baleares: Informes completos (trienal) e Informes de coyuntura (anual)
http://www.caib.es/sites/informesmediambient/es/introduccion-17689/?campa=yes

LINKS TO RECOMMENDED WEBSITES ON THE ENVIRONMENT
Punto de Información Ambiental: http://www.caib.es/sites/puntdinformacioambiental/es/pagina_inicial-57096

CANARY ISLANDS



ADMINISTRATIVE, GEOGRAPHIC AND SOCIO-ECONOMIC INFORMATION

Statute of Autonomy: Organic Law 1/2018, of 5 July, on the reform of the Statute of Autonomy of the Canary Islands
Area: 7 446.95 km²
Length of coastline: 1 485 km (14.4 % of the Spanish total)
Population (2018): 2 127 685 inhabitants / **Change 2017-2018 (%):** 0.9
Population density (2018): 285.7 inhabitants/km² (Spain: 92.3 inhabitants/km²)
Household income (2016): 12 550 €/inhabitant (Spain: 14 781 €/inhabitant)

Sectoral employment structure (% employed). Year 2018				
Scope	Agriculture	Construction	Industry	Services
Canary Islands	2.5	5.5	4.2	87.8
Spain	4.2	6.3	14.0	75.5

GDP per capita (€/inhabitant)				
Scope	2005	2010	2015	2018
Canary Islands	19 595	20 091	19 340	21 031
Spain	21 313	23 215	23 296	25 854

Sectoral structure of GVA (%) (2018 Estimate)				
Scope	Agriculture	Construction	Industry	Services
Canary Islands	1.2	5.6	7.0	76.7
Spain	2.6	5.9	16.0	66.0

Unemployment rate %				
Scope	2006	2010	2015	2018
Canary Islands	11.6	28.6	29.1	20.1
Spain	8.5	19.9	22.1	15.3

ENVIRONMENTAL INFORMATION

Nature: Protected land area (ha) (YEAR 2018)

Scope	Total protected land area (ha)		PA	NATURA 2000 NETWORK	MAB	RAMSAR	SPAMI
Canary Islands	575 613.5	77.3 %	302 037.6	347 952.3	467 647.0	95.2	0.0
Spain	16 613 175.9	32.8 %	7 402 026.9	13 839 629.4	5 570 613.0	282 694.0	51 857.9

Nature: Forest fires (2018)

Scope	No. of events		Total forest area burned (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (< 1ha)	Fires (> 1 ha)		Wooded area	Scrubland and pastures	Total woody area	Total
Canary Islands	47.0	3.0	414.2	402.9	5.7	408.6	5.6
Spain	5 154.0	1 989.0	25 162.4	4 739.0	16 745.4	21 484.5	3 678.0

Water: Consumption per inhabitant (litre/inhabitant/day)

Scope	2010	2011	2012	2013	2014	2016	2010-2016 (%)
Canary Islands	151	152	151	143	144	150	-0.7
Spain	142	140	135	130	132	136	-4.2

Household waste (kg/inhabitant)

Scope	Total		Mixed waste		Paper and cardboard waste		Glass waste		Mixed containers and mixed packaging	
	2010	2016	2010	2016	2010	2016	2010	2016	2010	2016
Canary Islands	701.4	581.2	609.3	521.7	33.6	15.7	13.3	17.1	9.6	9.0
Spain	523.6	471.0	416.5	381.3	31.5	21.7	17.3	16.2	13.8	12.7

Air: air quality in relation to the protection of human health.
For every pollutant, percentage of stations classified by range of legislated values (annual mean)

NO_2: annual mean concentration (µg/m³). Year 2017					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
59.6	36.2	2.1	2.1	0.0	47
PM10: annual mean concentration (µg/m³). Year 2017					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
2.0	9.8	41.2	47.1	0.0	51
PM2.5: annual mean concentration (µg/m³). Year 2017					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2016
11.1	77.8	11.1	0.0	0.0	45
O_3: maximum daily value of mobile eight-hour averages (µg/m³). Year 2017					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2016
78.7	21.3	0.0			47

Note: LET = Lower Evaluation Threshold; UET = Upper Evaluation Threshold; AVL = Annual Limit Value; LTT = Long-Term Target; TV = Target Value.

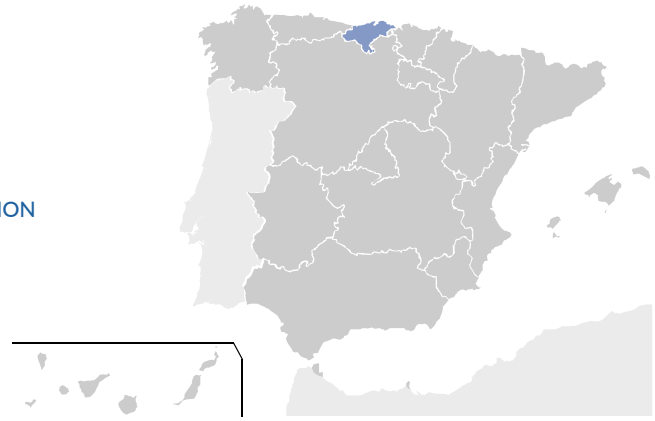
Energy: Production of electricity from renewable sources as % of total electricity production

Scope	2011	2012	2013	2014	2015	2016	2017	2018
Canary Islands	6.8	7.1	7.8	8.1	8.0	8.0	7.9	10.5
Spain	31.0	30.1	40.2	40.5	35.2	38.6	32.3	38.4

ENVIRONMENTAL REPORTS
Informe de Coyuntura Ambiental:http://www.gobiernodecanarias.org/cptss/sostenibilidad/temas/informacion-ambiental/derecho_de_los_ciudadanos_a_la_informacion_ambiental/simac/informes-coyuntura-ambiental/

LINKS TO RECOMMENDED WEBSITES ON THE ENVIRONMENT
http://www.gobiernodecanarias.org/transparencia/destacados/medioambiente/

CANTABRIA



ADMINISTRATIVE, GEOGRAPHIC AND SOCIO-ECONOMIC INFORMATION

Statute of Autonomy: Organic Act 8/1981, of 30 December, on the Statute of Autonomy of Cantabria amended by Organic Law 11/1998, of 30 December
Area: 5 326.54 km²
Length of coastline: 615.0 km (6.0 % of the Spanish total)
Population (2018): 580 229 inhabitants **/ Change 2017-2018 (%):** 0.0
Population density (2018): 108.9 inhabitants/km² (Spain: 92.3 inhabitants/km²)
Household income (2016): 14 584 €/inhabitant (Spain: 14 781 €/inhabitant)

Sectoral employment structure (% employed). Year 2018				
Scope	Agriculture	Construction	Industry	Services
Cantabria	2.7	7.1	15.8	74.3
Spain	4.2	6.3	14.0	75.5

GDP per capita (€/inhabitant)				
Scope	2005	2010	2015	2018
Cantabria	20 019	21 754	20 875	23 817
Spain	21 313	23 215	23 296	25 854

Sectoral structure of GVA (%) (2018 Estimate)				
Scope	Agriculture	Construction	Industry	Services
Cantabria	1.6	7.1	21.6	60.2
Spain	2.6	5.9	16.0	66.0

Unemployment rate %				
Scope	2006	2010	2015	2018
Cantabria	6.5	13.7	17.7	10.7
Spain	8.5	19.9	22.1	15.3

ENVIRONMENTAL INFORMATION

Nature: Protected land area (ha) (YEAR 2018)

Scope	Total protected land area (ha)		PA	NATURA 2000 NETWORK	MAB	RAMSAR	SPAMIs
Cantabria	151 028.7	28.4 %	150 991.7	145 800.9	14 965.9	5 602.2	0.0
Spain	16 613 175.9	32.8 %	7 402 026.9	13 839 629.4	5 570 613.0	282 694.0	51 857.9

Nature: Forest fires (2018)

Scope	No. of events		Total forest area burned (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (< 1ha)	Fires (> 1 ha)		Wooded area	Scrubland and pastures	Total woody area	Total
Cantabria	188.0	380.0	4 595.6	572.5	3 337.2	3 909.7	685.9
Spain	5 154.0	1 989.0	25 162.4	4 739.0	16 745.4	21 484.5	3 678.0

Water: Consumption per inhabitant (litre/inhabitant/day)

Scope	2010	2011	2012	2013	2014	2016	2010-2016 (%)
Cantabria	170	158	151	144	152	155	-8.8
Spain	142	140	135	130	132	136	-4.2

Household waste (kg/inhabitant)

Scope	Total		Mixed waste		Paper and cardboard waste		Glass waste		Mixed containers and mixed packaging	
	2010	2016	2010	2016	2010	2016	2010	2016	2010	2016
Cantabria	604.3	538.2	454.7	453.6	23.4	8.7	17.9	19.3	8.6	9.4
Spain	523.6	471.0	416.5	381.3	31.5	21.7	17.3	16.2	13.8	12.7

Air: air quality in relation to the protection of human health.
For every pollutant, percentage of stations classified by range of legislated values (annual mean)

NO_2: annual mean concentration (µg/m³). Year 2017					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
9.1	72.7	0.0	18.2	0.0	11
PM10: annual mean concentration (µg/m³). Year 2017					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
9.1	27.3	54.5	9.1	0.0	11
PM2.5: annual mean concentration (µg/m³). Year 2017					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2016
0.0	100.0	0.0	0.0	0.0	4
O_3: maximum daily value of mobile eight-hour averages (µg/m³). Year 2017					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2016
75.0	25.0	0.0			8

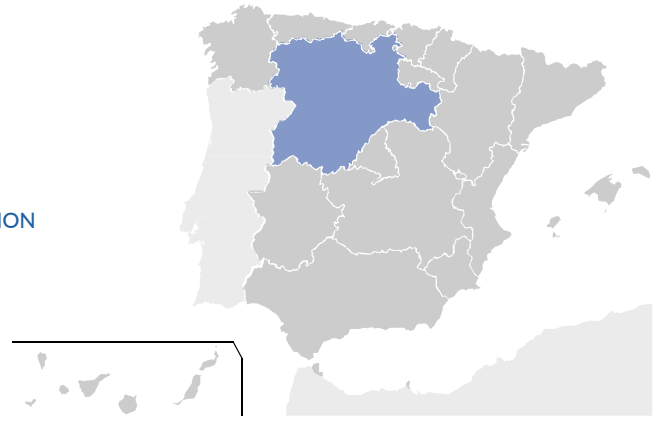
Note: LET = Lower Evaluation Threshold; UET = Upper Evaluation Threshold; AVL = Annual Limit Value; LTT = Long-Term Target; TV = Target Value.

Energy: Production of electricity from renewable sources as % of total electricity production

Scope	2011	2012	2013	2014	2015	2016	2017	2018
Cantabria	17.0	14.4	22.2	22.7	28.0	25.5	18.5	22.8
Spain	31.0	30.1	40.2	40.5	35.2	38.6	32.3	38.4

LINKS TO RECOMMENDED WEBSITES ON THE ENVIRONMENT
www.medioambientecantabria.es
www.airecantabria.es
https://cima.cantabria.es
https://provoca.cantabria.es

CASTILE AND LEÓN



ADMINISTRATIVE, GEOGRAPHIC AND SOCIO-ECONOMIC INFORMATION

Statute of Autonomy: Organic Law 14/2007, of 30 November, on the reform of the Statute of Autonomy of Castile and León
Area: 94 226.91 km²
Population (2018): 2 409 164 inhabitants / **Change 2017-2018 (%):** -0.7
Population density (2018): 25.6 inhabitants/km² (Spain: 92.3 inhabitants/km²)
Household income (2016): 14 638 €/inhabitant (Spain: 14 781 €/inhabitant)

Sectoral employment structure (% employed). Year 2018				
Scope	Agriculture	Construction	Industry	Services
Castile and León	6.3	6.7	18.6	68.3
Spain	4.2	6.3	14.0	75.5

Sectoral structure of GVA (%) (2018 Estimate)				
Scope	Agriculture	Construction	Industry	Services
Castile and León	5.0	6.4	19.5	59.6
Spain	2.6	5.9	16.0	66.0

GDP per capita (€/inhabitant)				
Scope	2005	2010	2015	2018
Castile and León	19 645	21 827	21 723	24 397
Spain	21 313	23 215	23 296	25 854

Unemployment rate %				
Scope	2006	2010	2015	2018
Castile and León	8.1	15.8	18.3	12.1
Spain	8.5	19.9	22.1	15.3

ENVIRONMENTAL INFORMATION

Nature: Protected land area (ha) (YEAR 2018)

Scope	Total protected land area (ha)		PA	NATURA 2000 NETWORK	MAB	RAMSAR	SPAMIs
Castile and León	2 943 171.1	31.2 %	769 973.0	2 464 997.9	998 642.0	3 040.1	0.0
Spain	16 613 175.9	32.8 %	7 402 026.9	13 839 629.4	5 570 613.0	282 694.0	51 857.9

Nature: Forest fires (2018)

Scope	No. of events		Total forest area burned (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (< 1ha)	Fires (> 1 ha)		Wooded area	Scrubland and pastures	Total woody area	Total
Castile and León	649.0	260.0	2 628.4	436.4	1 702.5	2 138.9	489.5
Spain	5 154.0	1 989.0	25 162.4	4 739.0	16 745.4	21 484.5	3 678.0

Water: Consumption per inhabitant (litre/inhabitant/day)

Scope	2010	2011	2012	2013	2014	2016	2010-2016 (%)
Castile and León	164	167	149	157	166	152	-7.3
Spain	142	140	135	130	132	136	-4.2

Household waste (kg/inhabitant)

Scope	Total		Mixed waste		Paper and cardboard waste		Glass waste		Mixed containers and mixed packaging	
	2010	2016	2010	2016	2010	2016	2010	2016	2010	2016
Castile and León	464.5	435.8	362.2	375.1	22.3	18.3	16.8	18.0	7.8	9.2
Spain	523.6	471.0	416.5	381.3	31.5	21.7	17.3	16.2	13.8	12.7

Air: air quality in relation to the protection of human health.
For every pollutant, percentage of stations classified by range of legislated values (annual mean)

NO_2: annual mean concentration (µg/m³). Year 2017					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
69.7	27.3	0.0	3.0	0.0	33
PM10: annual mean concentration (µg/m³). Year 2017					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
6.9	75.9	17.2	0.0	0.0	29
PM2.5: annual mean concentration (µg/m³). Year 2017					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2016
30.0	50.0	20.0	0.0	0.0	10
O_3: maximum daily value of mobile eight-hour averages (µg/m³). Year 2017					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2016
11.8	82.4	5.9			34

Note: LET = Lower Evaluation Threshold; UET = Upper Evaluation Threshold; AVL = Annual Limit Value; LTT = Long-Term Target; TV = Target Value.

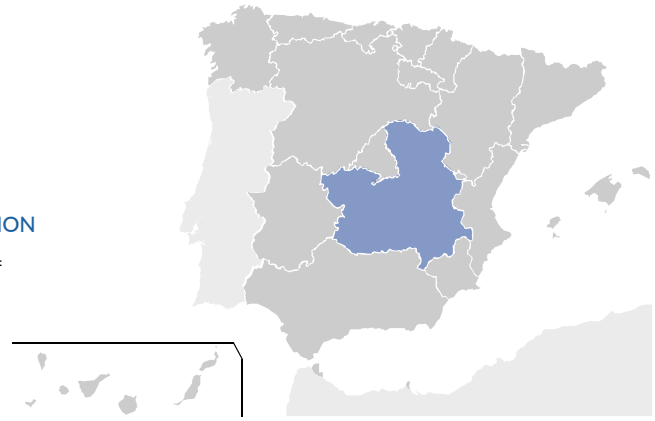
Energy: Production of electricity from renewable sources as % of total electricity production

Scope	2011	2012	2013	2014	2015	2016	2017	2018
Castile and León	53.9	49.0	70.7	70.4	63.5	73.0	64.5	76.8
Spain	31.0	30.1	40.2	40.5	35.2	38.6	32.3	38.4

ENVIRONMENTAL REPORTS
Informe medio ambiente (several years)
https://medioambiente.jcyl.es/web/jcyl/MedioAmbiente/es/Plantilla100Detalle/1246988359553/_/1284810565251/Redaccion

LINKS TO RECOMMENDED WEBSITES ON THE ENVIRONMENT
https://medioambiente.jcyl.es/web/jcyl/MedioAmbiente/es/Plantilla100/1131977831418/_/_/_
https://medioambiente.jcyl.es/

CASTILE - LA MANCHA



ADMINISTRATIVE, GEOGRAPHIC AND SOCIO-ECONOMIC INFORMATION

Statute of Autonomy: Organic Law 2/2014, of 21 May, on the reform of the Statute of Autonomy of Castile - La Mancha
Area: 7 946. 97 km²
Population (2018): 2 026 807 inhabitants / **Change 2017-2018 (%):** -0.2
Population density (2018): 25.5 inhabitants/km² (Spain: 92.3 inhabitants/km²)
Household income (2016): 12 401 €/inhabitant (Spain: 14 781 €/inhabitant)

Sectoral employment structure (% employed). Year 2018				
Scope	Agriculture	Construction	Industry	Services
Castile - La Mancha	6.7	8.4	16.4	68.6
Spain	4.2	6.3	14.0	75.5

GDP per capita (€/inhabitant)				
Scope	2005	2010	2015	2018
Castile - La Mancha	17 141	18 765	18 229	20 645
Spain	21 313	23 215	23 296	25 854

Sectoral structure of GVA (%) (2018 Estimate)				
Scope	Agriculture	Construction	Industry	Services
Castile - La Mancha	8.2	7.1	19.6	55.6
Spain	2.6	5.9	16.0	66.0

Unemployment rate %				
Scope	2006	2010	2015	2018
Castile - La Mancha	8.8	21.2	26.4	18.2
Spain	8.5	19.9	22.1	15.3

ENVIRONMENTAL INFORMATION

Nature: Protected land area (ha) (YEAR 2018)

Scope	Total protected land area (ha)		PA	NATURA 2000 NETWORK	MAB	RAMSAR	SPAMIs
Castile - La Mancha	2 277 682.3	28.7 %	582 929.3	1 837 533.5	418 066.2	10 341	0.0
Spain	16 613 175.9	32.8 %	7 402 026.9	13 839 629.4	5 570 613.0	282 694.0	51 857.9

Nature: Forest fires (2018)

Scope	No. of events		Total forest area burned (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (< 1ha)	Fires (> 1 ha)		Wooded area	Scrubland and pastures	Total woody area	Total
Castile - La Mancha	421.0	127.0	1 247.6	184.6	649.4	834.1	413.6
Spain	5 154.0	1 989.0	25 162.4	4 739.0	16 745.4	21 484.5	3 678.0

Water: Consumption per inhabitant (litre/inhabitant/day)

Scope	2010	2011	2012	2013	2014	2016	2010-2016 (%)
Castile - La Mancha	148	152	142	140	125	128	-13.5
Spain	142	140	135	130	132	136	-4.2

Household waste (kg/inhabitant)

Scope	Total		Mixed waste		Paper and cardboard waste		Glass waste		Mixed containers and mixed packaging	
	2010	2016	2010	2016	2010	2016	2010	2016	2010	2016
Castile - La Mancha	540.9	475.3	478.4	431.7	17.3	13.1	10.0	10.1	8.3	9.2
Spain	523.6	471.0	416.5	381.3	31.5	21.7	17.3	16.2	13.8	12.7

Air: air quality in relation to the protection of human health.
For every pollutant, percentage of stations classified by range of legislated values (annual mean)

NO_2: annual mean concentration (µg/m³). Year 2017					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
35.7	57.1	7.1	0.0	0.0	14
PM10: annual mean concentration (µg/m³). Year 2017					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
9.1	9.1	36.4	45.5	0.0	11
PM2.5: annual mean concentration (µg/m³). Year 2017					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2016
40.0	20.0	40.0	0.0	0.0	5
O_3: maximum daily value of mobile eight-hour averages (µg/m³). Year 2017					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2016
0.0	64.3	35.7			14

Note: LET = Lower Evaluation Threshold; UET = Upper Evaluation Threshold; AVL = Annual Limit Value; LTT = Long-Term Target; TV = Target Value.

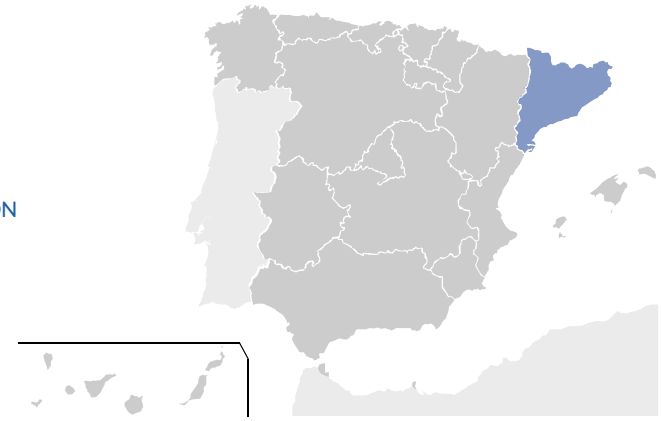
Energy: Production of electricity from renewable sources as % of total electricity production

Scope	2011	2012	2013	2014	2015	2016	2017	2018
Castile - La Mancha	41.1	44.8	53.5	53.5	49.6	51.7	49.8	52.3
Spain	31.0	30.1	40.2	40.5	35.2	38.6	32.3	38.4

ENVIRONMENTAL REPORTS
https://www.castillalamancha.es/node/237393
https://www.castillalamancha.es/node/75529
https://www.castillalamancha.es/node/276770

LINKS TO RECOMMENDED WEBSITES ON THE ENVIRONMENT
https://www.castillalamancha.es/tema/medio-ambiente/medio-natural
https://www.castillalamancha.es/tema/medio-ambiente/calidad-ambiental
https://www.castillalamancha.es/tema/medio-ambiente/gesti%C3%B3n-del-agua-y-energ%C3%ADas-renovables
https://www.castillalamancha.es/tema/medio-ambiente/caza-y-pesca
https://www.castillalamancha.es/tema/medio-ambiente/cambio-clim%C3%A1tico-0

CATALONIA



ADMINISTRATIVE, GEOGRAPHIC AND SOCIO-ECONOMIC INFORMATION

Statute of Autonomy: Organic Law 6/2006, of 19 July, on the reform of the Statute of Autonomy of Catalonia
Area: 32 090.54 km²
Length of coastline: 811.9 km (7.9 % of the Spanish total)
Population (2018): 7 600 065 inhabitants / **Change 2017-2018 (%):** 0.6
Population density (2018): 236.8 inhabitants/km² (Spain: 92.3 inhabitants/km²)
Household income (2016): 17 401 €/inhabitant (Spain: 14 781 €/inhabitant)

Sectoral employment structure (% employed). Year 2018				
Scope	Agriculture	Construction	Industry	Services
Catalonia	1.7	6.3	18.6	73.3
Spain	4.2	6.3	14.0	75.5

GDP per capita (€/inhabitant)				
Scope	2005	2010	2015	2018
Catalonia	25 205	27 192	27 765	30 769
Spain	21 313	23 215	23 296	25 854

Sectoral structure of GVA (%) (2018 Estimate)				
Scope	Agriculture	Construction	Industry	Services
Catalonia	0.9	5.1	19.7	64.8
Spain	2.6	5.9	16.0	66.0

Unemployment rate %				
Scope	2006	2010	2015	2018
Catalonia	6.5	17.7	18.6	11.5
Spain	8.5	19.9	22.1	15.3

ENVIRONMENTAL INFORMATION

Nature: Protected land area (ha) (YEAR 2018)

Scope	Total protected land area (ha)		PA	NATURA 2000 NETWORK	MAB	RAMSAR	SPAMIs
Catalonia	1 232 223.6	38.3 %	1 031 451.4	982 745.0	337 925.5	52 963.4	10 871.2
Spain	16 613 175.9	32.8 %	7 402 026.9	13 839 629.4	5 570 613.0	282 694.0	51 857.9

Nature: Forest fires (2018)

Scope	No. of events		Total forest area burned (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (< 1ha)	Fires (> 1 ha)		Wooded area	Scrubland and pastures	Total woody area	Total
Catalonia	283.0	35.0	153.6	61.3	75.3	136.6	16.9
Spain	5 154.0	1 989.0	25 162.4	4 739.0	16 745.4	21 484.5	3 678.0

Water: Consumption per inhabitant (litre/inhabitant/day)

Scope	2010	2011	2012	2013	2014	2016	2010-2016 (%)
Catalonia	130	127	123	117	118	127	-2.3
Spain	142	140	135	130	132	136	-4.2

Household waste (kg/inhabitant)

Scope	Total		Mixed waste		Paper and cardboard waste		Glass waste		Mixed containers and mixed packaging	
	2010	2016	2010	2016	2010	2016	2010	2016	2010	2016
Catalonia	534.8	477.3	336.9	324.4	60.7	36.3	24.9	22.7	16.6	17.4
Spain	523.6	471.0	416.5	381.3	31.5	21.7	17.3	16.2	13.8	12.7

Air: air quality in relation to the protection of human health.
For every pollutant, percentage of stations classified by range of legislated values (annual mean)

NO_2: annual mean concentration (µg/m³). Year 2017					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
21.5	33.8	9.2	27.7	7.7	65

PM10: annual mean concentration (µg/m³). Year 2017					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
1.1	25.0	60.2	13.6	0.0	88

PM2.5: annual mean concentration (µg/m³). Year 2017					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2016
0.0	38.9	47.2	13.9	0.0	36

O_3: maximum daily value of mobile eight-hour averages (µg/m³). Year 2017			
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)	No. of stations 2016
5.4	70.3	24.3	37

Note: LET = Lower Evaluation Threshold; UET = Upper Evaluation Threshold; AVL = Annual Limit Value; LTT = Long-Term Target; TV = Target Value.

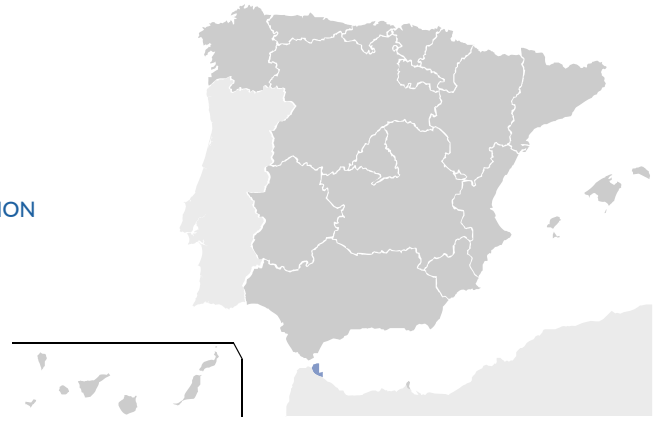
Energy: Production of electricity from renewable sources as % of total electricity production

Scope	2011	2012	2013	2014	2015	2016	2017	2018
Catalonia	15.2	15.3	21.1	21.3	18.2	17.2	16.4	20.8
Spain	31.0	30.1	40.2	40.5	35.2	38.6	32.3	38.4

ENVIRONMENTAL REPORTS
Informe anual sobre el medio ambiente en Catalunya (2016-2017)
http://territori.gencat.cat/es/01_departament/06_estadistica/07_publicacions_estadistiques/medi_ambient_sostenibilitat_publicacions_est/informe-anual-sobre-el-medi-ambient-a-catalunya/

LINKS TO RECOMMENDED WEBSITES ON THE ENVIRONMENT
http://mediambient.gencat.cat/ca/05_ambits_dactuacio/
http://territori.gencat.cat/es/01_departament/06_estadistica/04_estadistiques_i_indicadors_de_medi_ambient/

CEUTA



ADMINISTRATIVE, GEOGRAPHIC AND SOCIO-ECONOMIC INFORMATION

Statute of Autonomy: Organic Law 1/1995, of 13 March, on the Statute of Autonomy of Ceuta
Area: 19 km²
Length of coastline: 22.7 km (0.2 % of the Spanish total)
Population (2018): 85 144 inhabitants / **Change 2017-2018 (%):** 0.2
Population density (2018): 4 481,3 inhabitant/km² (Spain: 92.3 inhabitants/km²)
Household income (2016): 12 668 €/inhabitant (Spain: 14 781 €/inhabitant)

Sectoral employment structure (% employed). Year 2018				
Scope	Agriculture	Construction	Industry	Services
Ceuta	0.2	4.0	3.8	92.1
Spain	4.2	6.3	14.0	75.5

GDP per capita (€/inhabitant)				
Scope	2005	2010	2015	2018
Ceuta	18 421	19 706	18 938	20 032
Spain	21 313	23 215	23 296	25 854

Sectoral structure of GVA (%) (2018 Estimate)				
Scope	Agriculture	Construction	Industry	Services
Ceuta	0.2	4.9	5.5	79.9
Spain	2.6	5.9	16.0	66.0

Unemployment rate %				
Scope	2006	2010	2015	2018
Ceuta	21.5	23.9	27.6	29.0
Spain	8.5	19.9	22.1	15.3

ENVIRONMENTAL INFORMATION

Nature: Protected land area (ha) (YEAR 2018)

Scope	Total protected land area (ha)		PA	NATURA 2000 NETWORK	MAB	RAMSAR	SPAMI
Ceuta	630.5	31.8 %	0.0	630.5	0.0	0.0	0.0
Spain	16 613 175.9	32.8 %	7 402 026.9	3 839 629.4	5 570 613.0	282 694.0	51 857.9

Nature: Forest fires (2018)

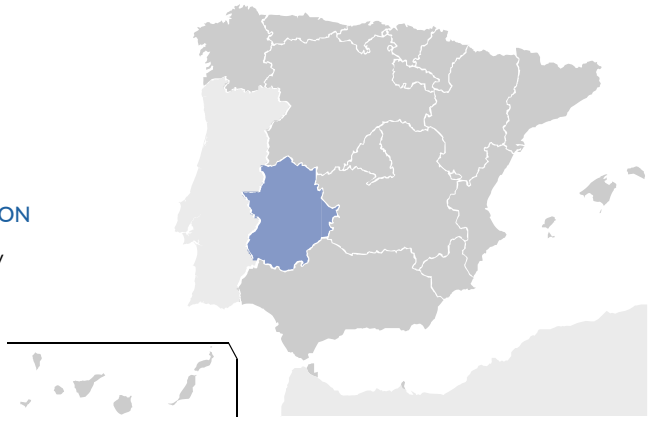
Scope	No. of events		Total forest area burned (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (< 1ha)	Fires (> 1 ha)		Wooded area	Scrubland and pastures	Total woody area	Total
Ceuta	0.0	2.0	74.0	0.0	74.0	74.0	0.0
Spain	5 154.0	1 989.0	25 162.4	4 739.0	16 745.4	21 484.5	3 678.0

Water: Consumption per inhabitant (litre/inhabitant/day)

Scope	2010	2011	2012	2013	2014	2016	2010-2016 (%)
Ceuta and Melilla	151	156	109	106	105	103	-31.8
Spain	142	140	135	130	132	136	-4.2

LINKS TO RECOMMENDED WEBSITES ON THE ENVIRONMENT
http://www.lineaverdeceutatrace.com/

EXTREMADURA



ADMINISTRATIVE, GEOGRAPHIC AND SOCIO-ECONOMIC INFORMATION

Statute of Autonomy: Organic Law 1/2011, of 28 January, on the Statute of Autonomy of the Autonomous Community of Extremadura
Area: 41 634.5 km²
Population (2018): 1 072 863 inhabitants / **Change 2017-2018 (%):** -0.7
Population density (2018): 25.8 inhabitants/km² (Spain: 92.3 inhabitants/km²)
Household income (2016): 11 310 €/inhabitant (Spain: 14 781 €/inhabitant)

Sectoral employment structure (% employed). Year 2018				
Scope	Agriculture	Construction	Industry	Services
Extremadura	13.6	5.7	8.8	71.9
Spain	4.2	6.3	14.0	75.5

GDP per capita (€/inhabitant)				
Scope	2005	2010	2015	2018
Extremadura	14 194	16 381	16 111	18 174
Spain	21 313	23 215	23 296	25 854

Sectoral structure of GVA (%) (2018 Estimate)				
Scope	Agriculture	Construction	Industry	Services
Extremadura	7.8	7.1	13.1	62.5
Spain	2.6	5.9	16.0	66.0

Unemployment rate %				
Scope	2006	2010	2015	2018
Extremadura	13.3	23.0	29.1	23.6
Spain	8.5	19.9	22.1	15.3

ENVIRONMENTAL INFORMATION

Nature: Protected land area (ha) (YEAR 2018)

Scope	Total protected land area (ha)		PA	NATURA 2000 NETWORK	MAB	RAMSAR	SPAMIs
Extremadura	1 427 305.4	34.2 %	316 608.6	1 263 943.2.	376 428.7	6 990.4	0.0
Spain	16 613 175.9	32.8 %	7 402 026.9	13 839 629.4	5 570 613.0	282 694.0	51 857.9

Nature: Forest fires (2018)

Scope	No. of events		Total forest area burned (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (< 1ha)	Fires (> 1 ha)		Wooded area	Scrubland and pastures	Total woody area	Total
Extremadura	393.0	287.0	3 572.0	447.8	1 304.8	1 752.6	1 819.4
Spain	5 154.0	1 989.0	25 162.4	4 739.0	16 745.4	21 484.5	3 678.0

Water: Consumption per inhabitant (litre/inhabitant/day)

Scope	2010	2011	2012	2013	2014	2016	2010-2016 (%)
Extremadura	158	141	137	140	125	129	-18.4
Spain	142	140	135	130	132	136	-4.2

Household waste (kg/inhabitant)

Scope	Total		Mixed waste		Paper and cardboard waste		Glass waste		Mixed containers and mixed packaging	
	2010	2016	2010	2016	2010	2016	2010	2016	2010	2016
Extremadura	514.2	449.6	461.8	382.5	29.8	31.8	7.8	8.8	9.4	10.4
Spain	523.6	471.0	416.5	381.3	31.5	21.7	17.3	16.2	13.8	12.7

Air: air quality in relation to the protection of human health.
For every pollutant, percentage of stations classified by range of legislated values (annual mean)

NO_2: annual mean concentration (µg/m³). Year 2017					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
85.7	14.3	0.0	0.0	0.0	7
PM10: annual mean concentration (µg/m³). Year 2017					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
0.0	100.0	0.0	0.0	0.0	7
PM2.5: annual mean concentration (µg/m³). Year 2017					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2016
0.0	100.0	0.0	0.0	0.0	5
O_3: maximum daily value of mobile eight-hour averages (µg/m³). Year 2017					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2016
0.0	14.3	85.7			7

Note: LET = Lower Evaluation Threshold; UET = Upper Evaluation Threshold; AVL = Annual Limit Value; LTT = Long-Term Target; TV = Target Value.

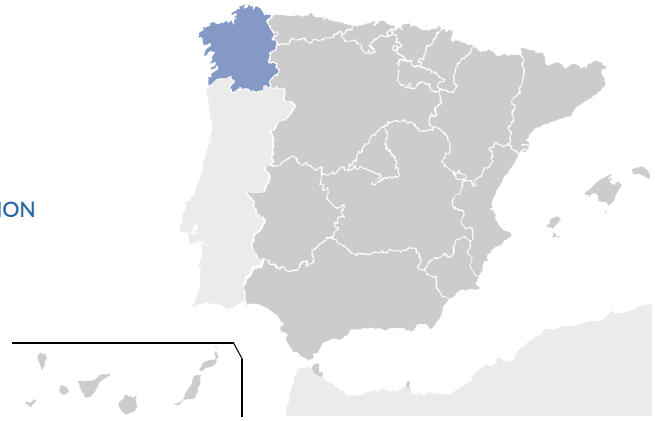
Energy: Production of electricity from renewable sources as % of total electricity production

Scope	2011	2012	2013	2014	2015	2016	2017	2018
Extremadura	26.0	18.3	27.3	29.0	23.5	27.4	22.5	24.8
Spain	31.0	30.1	40.2	40.5	35.2	38.6	32.3	38.4

ENVIRONMENTAL REPORTS
Informe ambiental de Extremadura)
http://extremambiente.juntaex.es/index.php?option=com_content&view=article&id=4672:informe-ambiental-de-extremadura-2014&catid=40:biblioteca-digital&Itemid=373

LINKS TO RECOMMENDED WEBSITES ON THE ENVIRONMENT
http://extremambiente.juntaex.es/index.php
http://www.juntaex.es/cons002/

GALICIA



ADMINISTRATIVE, GEOGRAPHIC AND SOCIO-ECONOMIC INFORMATION

Statute of Autonomy: Organic Law 1/1981, of 6 April, on the Statute of Autonomy of Galicia
Area: 29 574.69 km²
Length of coastline: 1 890 km (18.4 % of the Spanish total)
Population (2018): 2 701 743 inhabitants / **Change 2017-2018 (%):** -0.2
Population density (2018): 91.4 inhabitants/km² (Spain: 92.3 inhabitants/km²)
Household income (2016): 13 621 €/inhabitant (Spain: 14 781 €/inhabitant)

Sectoral employment structure (% employed). Year 2018				
Scope	Agriculture	Construction	Industry	Services
Galicia	6.3	6.2	15.7	71.8
Spain	4.2	6.3	14.0	75.5

GDP per capita (€/inhabitant)				
Scope	2005	2010	2015	2018
Galicia	17 667	20 574	20 660	23 294
Spain	21 313	23 215	23 296	25 854

Sectoral structure of GVA (%) (2018 Estimate)				
Scope	Agriculture	Construction	Industry	Services
Galicia	4.8	6.9	18.5	60.3
Spain	2.6	5.9	16.0	66.0

Unemployment rate %				
Scope	2006	2010	2015	2018
Galicia	8.4	15.3	19.3	13.3
Spain	8.5	19.9	22.1	15.3

ENVIRONMENTAL INFORMATION

Nature: Protected land area (ha) (YEAR 2018)

Scope	Total protected land area (ha)		PA	NATURA 2000 NETWORK	MAB	RAMSAR	SPAMI
Galicia	970 116.6	32.7 %	359 415.5	355 283.5	726 535.4	4 563.4	0.0
Spain	16 613 175.9	32.8 %	7 402 026.9	13 839 629.4	5 570 613.0	282 694.0	51 857.9

Nature: Forest fires (2018)

Scope	No. of events		Total forest area burned (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (< 1ha)	Fires (> 1 ha)		Wooded area	Scrubland and pastures	Total woody area	Total
Galicia	1 189.0	247.0	2 618.1	739.6	1 878.5	2 618.1	0.0
Spain	5 154.0	1 989.0	25 162.4	4 739.0	16 745.4	21 484.5	3 678.0

Water: Consumption per inhabitant (litre/inhabitant/day)

Scope	2010	2011	2012	2013	2014	2016	2010-2016 (%)
Galicia	131	132	132	119	129	138	5.3
Spain	142	140	135	130	132	136	-4.2

Household waste (kg/inhabitant)

Scope	Total		Mixed waste		Paper and cardboard waste		Glass waste		Mixed containers and mixed packaging	
	2010	2016	2010	2016	2010	2016	2010	2016	2010	2016
Galicia	423.8	407.9	358.3	343.3	16.8	12.7	14.1	15.2	8.0	8.4
Spain	523.6	471.0	416.5	381.3	31.5	21.7	17.3	16.2	13.8	12.7

Air: air quality in relation to the protection of human health.
For every pollutant, percentage of stations classified by range of legislated values (annual mean)

NO_2: annual mean concentration (µg/m³). Year 2017					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
47.5	45.0	7.5	0.0	0.0	40
PM10: annual mean concentration (µg/m³). Year 2017					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
13.5	56.8	16.2	13.5	0.0	37
PM2.5: annual mean concentration (µg/m³). Year 2017					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2016
0.0	66.7	28.6	4.8	0.0	21
O_3: maximum daily value of mobile eight-hour averages (µg/m³). Year 2017					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2016
22.2	77.8	0.0			27

Note: LET = Lower Evaluation Threshold; UET = Upper Evaluation Threshold; AVL = Annual Limit Value; LTT = Long-Term Target; TV = Target Value.

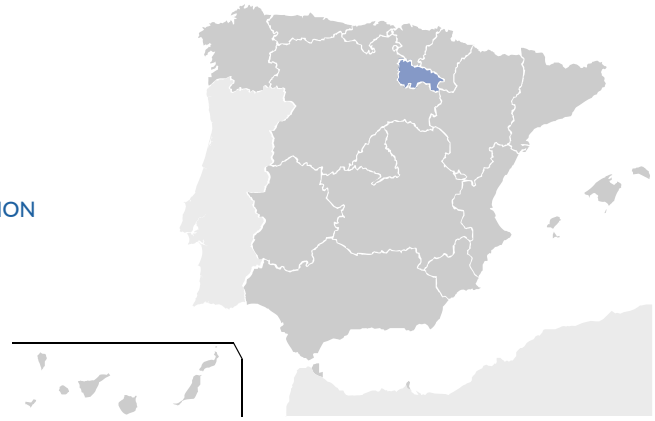
Energy: Production of electricity from renewable sources as % of total electricity production

Scope	2011	2012	2013	2014	2015	2016	2017	2018
Galicia	53.1	45.0	59.6	59.9	51.6	56.8	40.5	55.4
Spain	31.0	30.1	40.2	40.5	35.2	38.6	32.3	38.4

ENVIRONMENTAL REPORTS
Indicadores Ambientales de Galicia. Sistema de Información Ambiental de Galicia (SIAM) https://siam.xunta.gal/

LINKS TO RECOMMENDED WEBSITES ON THE ENVIRONMENT
Consellería de Medio Ambiente, Territorio e Vivenda: http://cmatv.xunta.gal/
Plataforma Galega de Información Ambiental (GalA): http://gaia.xunta.es/plataforma/
Sistema de Información de Residuos de Galicia (SIRGa): http://sirga.xunta.gal/
Sociedad Galega do Ambiente (SOGAMA): http://www.sogama.es/gl
Meteogalicia: https://www.meteogalicia.gal/web/index.action

LA RIOJA



ADMINISTRATIVE, GEOGRAPHIC AND SOCIO-ECONOMIC INFORMATION

Statute of Autonomy: Organic Law 3/1982, of 9 June, on the Statute of Autonomy of La Rioja, amended by Organic Law 3/1994, of 24 March and Organic Law 2/1999, of 17 January
Area: 5 045.25 km²
Population (2018): 315 675 inhabitants **/ Change 2017-2018 (%):** 0.1
Population density (2018): 62.6 inhabitants/km² (Spain: 92.3 inhabitants/km²)
Household income (2016): 15 251 €/inhabitant (Spain: 14 781 €/inhabitant)

Sectoral employment structure (% employed). Year 2018				
Scope	Agriculture	Construction	Industry	Services
La Rioja	5.0	5.2	25.4	64.3
Spain	4.2	6.3	14.0	75.5

GDP per capita (€/inhabitant)				
Scope	2005	2010	2015	2018
La Rioja	22 806	25 052	25 209	26 833
Spain	21 313	23 215	23 296	25 854

Sectoral structure of GVA (%) (2018 Estimate)				
Scope	Agriculture	Construction	Industry	Services
La Rioja	4.7	6.2	25.2	54.4
Spain	2.6	5.9	16.0	66.0

Unemployment rate %				
Scope	2006	2010	2015	2018
La Rioja	6.1	14.2	15.4	10.4
Spain	8.5	19.9	22.1	15.3

ENVIRONMENTAL INFORMATION

Nature: Protected land area (ha) (YEAR 2018)

Scope	Total protected land area (ha)		PA	NATURA 2000 NETWORK	MAB	RAMSAR	SPAMIs
La Rioja	258 592.1	51.3 %	168 264.7	167 541.1	119 822.1	86.1	0.0
Spain	16 613 175.9.	32.8 %	7 402 026.9	13 839 629.4	5 570 613.0	282 694.0	51 857.9

Nature: Forest fires (2018)

Scope	No. of events		Total forest area burned (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (< 1ha)	Fires (> 1 ha)		Wooded area	Scrubland and pastures	Total woody area	Total
La Rioja	26.0	9.0	57.5	28.2	29.3	57.5	0.0
Spain	5 154.0	1 989.0	25 162.4	4 739.0	16 745.4	21 484.5	3 678.0

Water: Consumption per inhabitant (litre/inhabitant/day)

Scope	2010	2011	2012	2013	2014	2016	2010-2016 (%)
La Rioja	119	120	130	112	106	115	-3.4
Spain	142	140	135	130	132	136	-4.2

Household waste (kg/inhabitant)

Scope	Total		Mixed waste		Paper and cardboard waste		Glass waste		Mixed containers and mixed packaging	
	2010	2016	2010	2016	2010	2016	2010	2016	2010	2016
La Rioja	420.5	441.7	352.3	341.2	28.7	25.3	20.3	27.8	14.7	15.1
Spain	523.6	471.0	416.5	381.3	31.5	21.7	17.3	16.2	13.8	12.7

Air: air quality in relation to the protection of human health.
For every pollutant, percentage of stations classified by range of legislated values (annual mean)

NO_2: annual mean concentration (µg/m³). Year 2017					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
80.0	20.0	0.0	0.0	0.0	5
PM10: annual mean concentration (µg/m³). Year 2017					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
0.0	100.0	0.0	0.0	0.0	5
PM2.5: annual mean concentration (µg/m³). Year 2017					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2016
0.0	100.0	0.0	0.0	0.0	5
O_3: maximum daily value of mobile eight-hour averages (µg/m³). Year 2017					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2016
40.0	60.0	0.0			5

Note: LET = Lower Evaluation Threshold; UET = Upper Evaluation Threshold; AVL = Annual Limit Value; LTT = Long-Term Target; TV = Target Value.

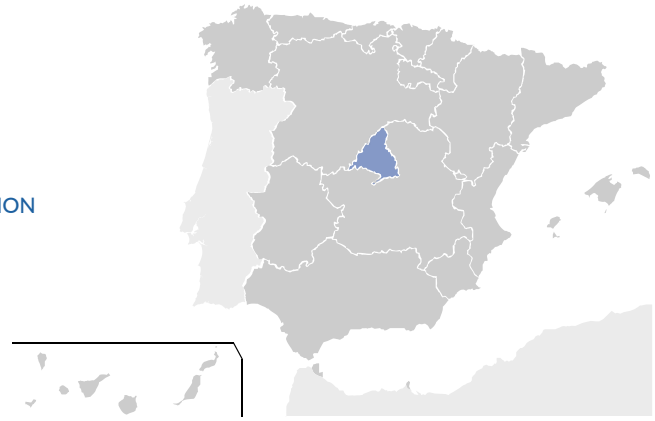
Energy: Production of electricity from renewable sources as % of total electricity production

Scope	2011	2012	2013	2014	2015	2016	2017	2018
La Rioja	52.1	46.8	72.5	85.9	65.1	53.5	40.9	50.8
Spain	31.0	30.1	40.2	40.5	35.2	38.6	32.3	38.4

LINKS TO RECOMMENDED WEBSITES ON THE ENVIRONMENT

Revista "Páginas de Información Ambiental" https://www.larioja.org/medio-ambiente/es/publicaciones/revista-paginas-informacion-ambiental
https://www.larioja.org/medio-ambiente/es
https://www.larioja.org/medio-ambiente/es/educacion-informacion-ambiental
https://www.larioja.org/medio-ambiente/es/estadistica/materias/estadisticas-medioambientales

MADRID



ADMINISTRATIVE, GEOGRAPHIC AND SOCIO-ECONOMIC INFORMATION

Statute of Autonomy: Organic Law 3/1983 of 25 February on the Statute of Autonomy of the Autonomous Community of Madrid, amended by Organic Law 10/1994, of 24 March, on the reform of the Statute of Autonomy of the Autonomous Community of Madrid and by Organic Law /1998 of 7 July

Area: 8 027.69 km²

Population (2018): 6 578 079 inhabitants / **Change 2017-2018 (%):** 1.1

Population density (2018): 819.4 inhabitants/km² (Spain: 92.3 inhabitants/km²)

Household income (2016): 18 707 €/inhabitant (Spain: 14 781 €/inhabitant)

Sectoral employment structure (% employed). Year 2018				
Scope	Agriculture	Construction	Industry	Services
Madrid	0.2	5.9	8.6	85.3
Spain	4.2	6.3	14.0	75.5

GDP per capita (€/inhabitant)				
Scope	2005	2010	2015	2018
Madrid	28 100	31 009	31 917	34 916
Spain	21 313	23 215	23 296	25 854

Sectoral structure of GVA (%) (2018 Estimate)				
Scope	Agriculture	Construction	Industry	Services
Madrid	0.1	4.6	9.3	76.5
Spain	2.6	5.9	16.0	66.0

Unemployment rate %				
Scope	2006	2010	2015	2018
Madrid	6.3	15.8	17.1	12.2
Spain	8.5	19.9	22.1	15.3

ENVIRONMENTAL INFORMATION

Nature: Protected land area (ha) (YEAR 2018)

Scope	Total protected land area (ha)		PA	NATURA 2000 NETWORK	MAB	RAMSAR	SPAMIs
Madrid	330 241.7	41.1 %	120 892.1	319 34 478.6	62 014.0	487.6	0.0
Spain	16 613 175.9	32.8 %	7 402 026.9	13 839 629.4	5 570 613.0	282 694.0	51 34 857.9

Nature: Forest fires (2018)

Scope	No. of events		Total forest area burned (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (< 1ha)	Fires (> 1 ha)		Wooded area	Scrubland and pastures	Total woody area	Total
Madrid	234.0	21.0	102.5	2.6	6.8	9.4	93.1
Spain	5 154.0	1 989.0	25 162.4	4 739.0	16 745.4	21 484.5	3 678.0

Water: Consumption per inhabitant (litre/inhabitant/day)

Scope	2010	2011	2012	2013	2014	2016	2010-2016 (%)
Madrid	139	140	135	131	131	133	-4.3
Spain	142	140	135	130	132	136	-4.2

Household waste (kg/inhabitant)

Scope	Total		Mixed waste		Paper and cardboard waste		Glass waste		Mixed containers and mixed packaging	
	2010	2016	2010	2016	2010	2016	2010	2016	2010	2016
Madrid	423.7	383.5	340.8	321.3	25.1	13.6	12.9	12.7	22.1	19.8
Spain	523.6	471.0	416.5	381.3	31.5	21.7	17.3	16.2	13.8	12.7

Air: air quality in relation to the protection of human health.
For every pollutant, percentage of stations classified by range of legislated values (annual mean)

NO_2: annual mean concentration (µg/m³). Year 2017					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
10.6	14.9	14.9	21.3	38.3	47
PM10: annual mean concentration (µg/m³). Year 2017					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
0.0	46.7	53.3	0.0	0.0	30
PM2.5: annual mean concentration (µg/m³). Year 2017					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2016
0.0	84.2	15.8	0.0	0.0	19
O_3: maximum daily value of mobile eight-hour averages (µg/m³). Year 2017					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2016
0.0	32.4	67.6			37

Note: LET = Lower Evaluation Threshold; UET = Upper Evaluation Threshold; AVL = Annual Limit Value; LTT = Long-Term Target; TV = Target Value.

Energy: Production of electricity from renewable sources as % of total electricity production

Scope	2011	2012	2013	2014	2015	2016	2017	2018
Madrid	31.1	22.6	32.5	40.9	37.0	36.6	36.8	35.2
Spain	31.0	30.1	40.2	40.5	35.2	38.6	32.3	38.4

ENVIRONMENTAL REPORTS

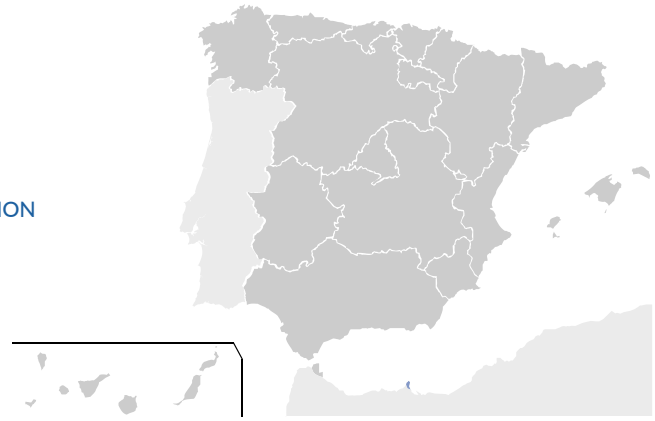
Informe de coyuntura "Diagnóstico ambiental de la Comunidad de Madrid 2018": http://www.comunidad.madrid/publicacion/ref/03525

Access to the complete collection of reports: http://www.comunidad.madrid/publicamadrid/coleccion/"Informes sobre el estado del medio ambiente"

LINKS TO RECOMMENDED WEBSITES ON THE ENVIRONMENT

http://www.comunidad.madrid
http://www.madrid.org/legislacionambiental
http://www.madrid.org/calidaddelaire
https://idem.madrid.org/visor/?v=ambiental

MELILLA



ADMINISTRATIVE, GEOGRAPHIC AND SOCIO-ECONOMIC INFORMATION

Statute of Autonomy: Organic Law 2/1995, of 13 March, on the Statute of Autonomy of Melilla
Area: 13 km²
Length of coastline: 7.3 km (0.1 % of the Spanish total)
Population (2018): 86 384 inhabitants / **Change 2017-2018 (%):** 0.3
Population density (2018): 6 644,9 inhabitant/km² (Spain: 92.3 inhabitants/km²)
Household income (2016): 11 589 €/inhabitant (Spain: 14 781 €/inhabitant)

Sectoral employment structure (% employed). Year 2018				
Scope	Agriculture	Construction	Industry	Services
Melilla	0.3	4.2	2.9	92.6
Spain	4.2	6.3	14.0	75.5

GDP per capita (€/inhabitant)				
Scope	2005	2010	2015	2018
Melilla	18 223	18 381	17 219	18 482
Spain	21 313	23 215	23 296	25 854

Sectoral structure of GVA (%) (2018 Estimate)				
Scope	Agriculture	Construction	Industry	Services
Melilla	0.1	5.1	5.2	80.1
Spain	2.6	5.9	16.0	66.0

Unemployment rate %				
Scope	2006	2010	2015	2018
Melilla	13.6	22.8	34.0	25.8
Spain	8.5	19.9	22.1	15.3

ENVIRONMENTAL INFORMATION

Nature: Protected land area (ha) (YEAR 2018)

Scope	Total protected land area (ha)		PA	NATURA 2000 NETWORK	MAB	RAMSAR	SPAMIs
Melilla	46.1	3.3 %	0.0	46.1	0.0	0.0	0.0
Spain	16 613 175.9	32.8 %	7 402 026.9	13 839 629.4	5 570 613.0	282 694.0	51 857.9

Nature: Forest fires (2018)

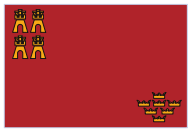
Scope	No. of events		Total forest area burned (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (< 1ha)	Fires (> 1 ha)		Wooded area	Scrubland and pastures	Total woody area	Total
Melilla	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spain	5 154.0	1 989.0	25 162.4	4 739.0	16 745.4	21 484.5	3 678.0

Water: Consumption per inhabitant (litre/inhabitant/day)

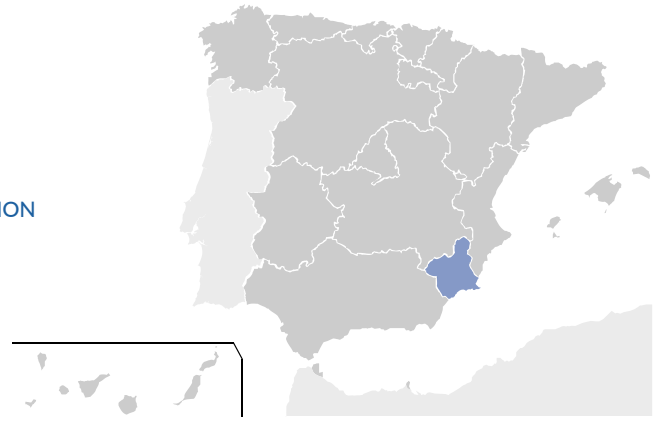
Scope	2010	2011	2012	2013	2014	2016	2010-2016 (%)
Melilla and Ceuta	151	156	109	106	105	103	-31.8
Spain	142	140	135	130	132	136	-4.2

LINKS TO RECOMMENDED WEBSITES ON THE ENVIRONMENT

https://medioambientemelilla.es/
https://medioambientemelilla.es/areas-de-actividad/calidad-y-evaluacion-ambiental/informacion-ambiental/
https://www.melilla.es/melillaPortal/contenedor_tema.jsp?seccion=distribuidor_servicios_tema.jsp&language=es&codResi=1&codMenuPN=601&codMenu=8&layout=contenedor_tema.jsp&ca=8&layout=contenedor_tema.jsp



MURCIA



ADMINISTRATIVE, GEOGRAPHIC AND SOCIO-ECONOMIC INFORMATION

Statute of Autonomy: Organic Law 7/2013, of 28 November, on the reform of Organic Law 4/1982, of 9 July, on the Statute of Autonomy of Murcia
Area: 11 313.91 km²
Length of coastline: 271.6 km (2.6 % of the total)
Population (2018): 1 478 509 inhabitants / **Change 2017-2018 (%):** 0.6
Population density (2018): 130.7 inhabitants/km² (Spain: 92.3 inhabitants/km²)
Household income (2016): 11 818 €/inhabitant (Spain: 14 781 €/inhabitant)

Sectoral employment structure (% employed). Year 2018				
Scope	Agriculture	Construction	Industry	Services
Murcia	13.4	6.1	13.3	67.2
Spain	4.2	6.3	14.0	75.5

GDP per capita (€/inhabitant)				
Scope	2005	2010	2015	2018
Murcia	17 874	19 213	19 287	21 134
Spain	21 313	23 215	23 296	25 854

Sectoral structure of GVA (%) (2018 Estimate)				
Scope	Agriculture	Construction	Industry	Services
Murcia	5.1	6.1	18.2	61.1
Spain	2.6	5.9	16.0	66.0

Unemployment rate %				
Scope	2006	2010	2015	2018
Murcia	7.9	22.9	24.6	16.8
Spain	8.5	19.9	22.1	15.3

ENVIRONMENTAL INFORMATION

Nature: Protected land area (ha) (YEAR 2018)

Scope	Total protected land area (ha)		PA	NATURA 2000 NETWORK	MAB	RAMSAR	SPAMIs
Murcia	277 095.3	24.5 %	62 104.3	266 888,7	0.0	1 686.2	1 774.42
Spain	16 613 175.9	32.8 %	7 402 026.9	13 839 629.4	5 570 613.0	282 694.0	51 857.9

Nature: Forest fires (2018)

Scope	No. of events		Total forest area burned (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (< 1ha)	Fires (> 1 ha)		Wooded area	Scrubland and pastures	Total woody area	Total
Murcia	110.0	8.0	56.9	20.4	27.2	47.6	9.3
Spain	5 154.0	1 989.0	25 162.4	4 739.0	16 745.4	21 484.5	3 678.0

Water: Consumption per inhabitant (litre/inhabitant/day)

Scope	2010	2011	2012	2013	2014	2016	2010-2016 (%)
Murcia	159	152	145	124	126	132	-17.0
Spain	142	140	135	130	132	136	-4.2

Household waste (kg/inhabitant)

Scope	Total		Mixed waste		Paper and cardboard waste		Glass waste		Mixed containers and mixed packaging	
	2010	2016	2010	2016	2010	2016	2010	2016	2010	2016
Murcia	452.7	468.3	394.9	406.3	13.3	10.4	12.7	16.7	9.3	10.0
Spain	523.6	471.0	416.5	381.3	31.5	21.7	17.3	16.2	13.8	12.7

Air: air quality in relation to the protection of human health.
For every pollutant, percentage of stations classified by range of legislated values (annual mean)

NO_2: annual mean concentration (µg/m³). Year 2017					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
25.0	62.5	12.5	0.0	0.0	8

PM10: annual mean concentration (µg/m³). Year 2017					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
0.0	50.0	37.5	12.5	0.0	8

PM2.5: annual mean concentration (µg/m³). Year 2017					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2016
0.0	100.0	0.0	0.0	0.0	1

O_3: maximum daily value of mobile eight-hour averages (µg/m³). Year 2017			
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)	No. of stations 2016
0.0	71.4	28.6	7

Note: LET = Lower Evaluation Threshold; UET = Upper Evaluation Threshold; AVL = Annual Limit Value; LTT = Long-Term Target; TV = Target Value.

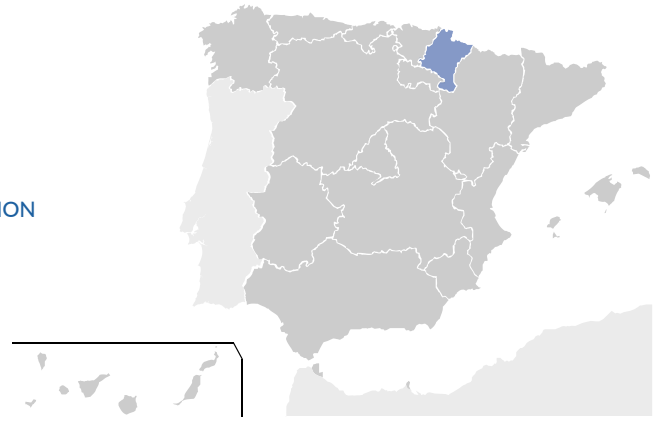
Energy: Production of electricity from renewable sources as % of total electricity production

Scope	2011	2012	2013	2014	2015	2016	2017	2018
Murcia	13.7	21.3	26.6	28.4	28.4	35.8	21.3	23.1
Spain	31.0	30.1	40.2	40.5	35.2	38.6	32.3	38.4

LINKS TO RECOMMENDED WEBSITES ON THE ENVIRONMENT

https://transparencia.carm.es/web/transparencia/transparencia-en-materia-de-medio-ambiente
https://sinqlair.carm.es/calidadaire/Default.aspx
http://www.murcianatural.carm.es/web/guest
http://www.canalmarmenor.es/

NAVARRE



ADMINISTRATIVE, GEOGRAPHIC AND SOCIO-ECONOMIC INFORMATION

Statute of Autonomy: Organic Law 7/2010, of 27 October, on the reform of Organic Law 13/82 of 10 August 1982 on reincorporation and revision of the Chartered Regime of Navarre
Area: 10 390.36 km²
Population (2018): 647 554 inhabitants **/ Change 2017-2018 (%):** 0.7
Population density (2018): 62.3 inhabitants/km² (Spain: 92.3 inhabitants/km²)
Household income (2016): 17 948 €/inhabitant (Spain: 14 781 €/inhabitant)

Sectoral employment structure (% employed). Year 2018				
Scope	Agriculture	Construction	Industry	Services
Navarre	4.2	6.3	26.7	62.9
Spain	4.2	6.3	14.0	75.5

GDP per capita (€/inhabitant)				
Scope	2005	2010	2015	2018
Navarre	26 594	28 752	28 925	31 809
Spain	21 313	23 215	23 296	25 854

Sectoral structure of GVA (%) (2018 Estimate)				
Scope	Agriculture	Construction	Industry	Services
Navarre	3.0	5.5	29.0	53.0
Spain	2.6	5.9	16.0	66.0

Unemployment rate %				
Scope	2006	2010	2015	2018
Navarre	5.4	11.9	13.8	10.0
Spain	8.5	19.9	22.1	15.3

ENVIRONMENTAL INFORMATION

Nature: Protected land area (ha) (YEAR 2018)

Scope	Total protected land area (ha)		PA	NATURA 2000 NETWORK	MAB	RAMSAR	SPAMIs
Navarre	289 290.6	27.9 %	85 568.5	281 007.2	39 285.3	315.8	0.0
Spain	16 613 175.9	32.8 %	7 402 026.9	13 839 629.4	5 570 613.0	282 694.0	51 857.9

Nature: Forest fires (2018)

Scope	No. of events		Total forest area burned (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (< 1ha)	Fires (> 1 ha)		Wooded area	Scrubland and pastures	Total woody area	Total
Navarre	122.0	86.0	311.9	62.0	194.5	256.6	55.3
Spain	5 154.0	1 989.0	25 162.4	4 739.0	16 745.4	21 484.5	3 678.0

Water: Consumption per inhabitant (litre/inhabitant/day)

Scope	2010	2011	2012	2013	2014	2016	2010-2016 (%)
Navarre	125	132	126	112	111	112	-10.4
Spain	142	140	135	130	132	136	-4.2

Household waste (kg/inhabitant)

Scope	Total		Mixed waste		Paper and cardboard waste		Glass waste		Mixed containers and mixed packaging	
	2010	2016	2010	2016	2010	2016	2010	2016	2010	2016
Navarre	499.5	453.8	309.2	258.2	47.4	24.1	25.5	15.3	31.7	18.9
Spain	523.6	471.0	416.5	381.3	31.5	21.7	17.3	16.2	13.8	12.7

Air: air quality in relation to the protection of human health.
For every pollutant, percentage of stations classified by range of legislated values (annual mean)

NO_2: annual mean concentration (µg/m³). Year 2017					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
55.6	33.3	11.1	0.0	0.0	9
PM10: annual mean concentration (µg/m³). Year 2017					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
22.2	77.8	0.0	0.0	0.0	9
PM2.5: annual mean concentration (µg/m³). Year 2017					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2016
0.0	100.0	0.0	0.0	0.0	1
O_3: maximum daily value of mobile eight-hour averages (µg/m³). Year 2017					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2016
22.2	77.8	0.0			9

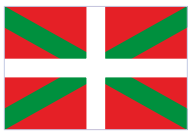
Note: LET = Lower Evaluation Threshold; UET = Upper Evaluation Threshold; AVL = Annual Limit Value; LTT = Long-Term Target; TV = Target Value.

Energy: Production of electricity from renewable sources as % of total electricity production

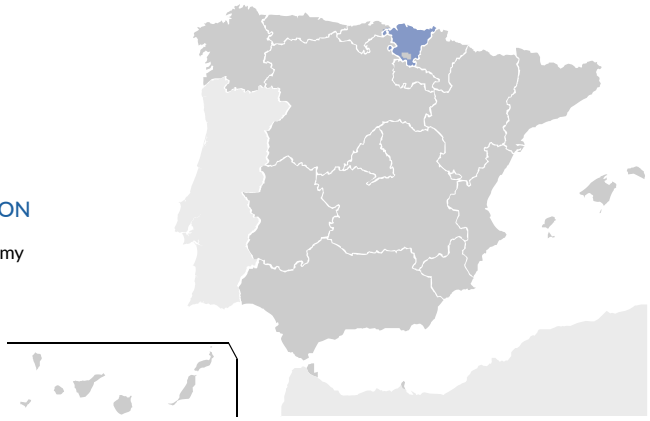
Scope	2011	2012	2013	2014	2015	2016	2017	2018
Navarre	63.0	66.9	74.4	76.8	71.1	62.2	60.9	69.7
Spain	31.0	30.1	40.2	40.5	35.2	38.6	32.3	38.4

ENVIRONMENTAL REPORTS
Boletín de Coyuntura Ambiental
Perfil Ambiental de Navarra

LINKS TO RECOMMENDED WEBSITES ON THE ENVIRONMENT
http://www.navarra.es/home_es/Temas/Medio+Ambiente/
https://espaciosnaturales.navarra.es/es/



BASQUE COUNTRY



ADMINISTRATIVE, GEOGRAPHIC AND SOCIO-ECONOMIC INFORMATION

Statute of Autonomy: Organic Law 3/1979, of 18 December, on the Statute of Autonomy of the Basque Country
Area: 7 230.33 km²
Length of coastline: 500.7 km (4.9 % of the Spanish total)
Population (2018): 2 199 088 inhabitants / **Change 2017-2018 (%):** 0.2
Population density (2018): 304.1 inhabitants/km² (Spain: 92.3 inhabitants/km²)
Household income (2016): 19 195 €/inhabitant (Spain: 14 781 €/inhabitant)

Sectoral employment structure (% employed). Year 2018				
Scope	Agriculture	Construction	Industry	Services
Basque Country	1.0	5.4	21.7	71.8
Spain	4.2	6.3	14.0	75.5

GDP per capita (€/inhabitant)				
Scope	2005	2010	2015	2018
Basque Country	26 502	30 114	30 568	34 079
Spain	21 313	23 215	23 296	25 854

Sectoral structure of GVA (%) (2018 Estimate)				
Scope	Agriculture	Construction	Industry	Services
Basque Country	0.7	6.0	26.1	57.7
Spain	2.6	5.9	16.0	66.0

Unemployment rate %				
Scope	2006	2010	2015	2018
Basque Country	7.2	10.7	14.8	10.0
Spain	8.5	19.9	22.1	15.3

ENVIRONMENTAL INFORMATION

Nature: Protected land area (ha) (YEAR 2018)

Scope	Total protected land area (ha)		PA	NATURA 2000 NETWORK	MAB	RAMSAR	SPAMIs
Basque Country	171 245.1	23.7 %	101 359.2	150 391.5	21 774.8	1 635.8	0.0
Spain	16 613 175.9	32.8 %	7 402 026.9	13 839 629.4	5 570 613.0	282 694.0	51 857.9

Nature: Forest fires (2018)

Scope	No. of events		Total forest area burned (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (< 1ha)	Fires (> 1 ha)		Wooded area	Scrubland and pastures	Total woody area	Total
Basque Country	36.0	11.0	46.8	20.0	14.5	34.5	12.3
Spain	5 154.0	1 989.0	25 162.4	4 739.0	16 745.4	21 484.5	3 678.0

Water: Consumption per inhabitant (litre/inhabitant/day)

Scope	2010	2011	2012	2013	2014	2016	2010-2016 (%)
Basque Country	120	115	116	123	116	112	-6.7
Spain	142	140	135	130	132	136	-4.2

Household waste (kg/inhabitant)

Scope	Total		Mixed waste		Paper and cardboard waste		Glass waste		Mixed containers and mixed packaging	
	2010	2016	2010	2016	2010	2016	2010	2016	2010	2016
Basque Country	493.4	456.0	329.3	306.4	77.7	58.7	24.8	27.0	14.2	18.1
Spain	523.6	471.0	416.5	381.3	31.5	21.7	17.3	16.2	13.8	12.7

Air: air quality in relation to the protection of human health.
For every pollutant, percentage of stations classified by range of legislated values (annual mean)

NO_2: annual mean concentration (µg/m³). Year 2017					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
25.0	53.6	17.9	0.0	3.6	28

PM10: annual mean concentration (µg/m³). Year 2017					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
3.7	88.9	7.4	0.0	0.0	27

PM2.5: annual mean concentration (µg/m³). Year 2017					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2016
9.1	90.9	0.0	0.0	0.0	11

O_3: maximum daily value of mobile eight-hour averages (µg/m³). Year 2017			
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)	No. of stations 2016
0.0	100.0	0.0	14

Note: LET = Lower Evaluation Threshold; UET = Upper Evaluation Threshold; AVL = Annual Limit Value; LTT = Long-Term Target; TV = Target Value.

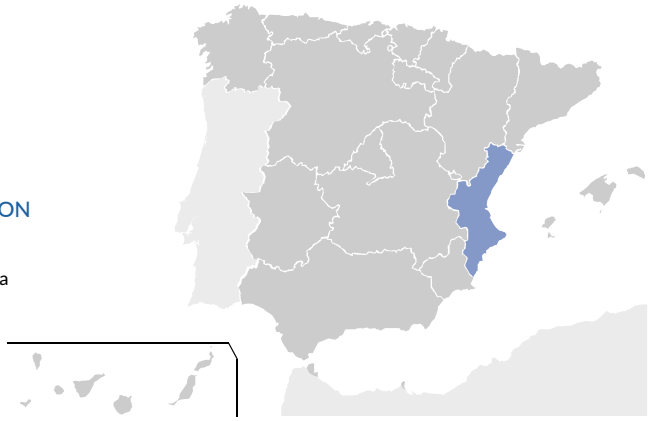
Energy: Production of electricity from renewable sources as % of total electricity production

Scope	2011	2012	2013	2014	2015	2016	2017	2018
Basque Country	16.3	13.0	18.8	17.1	17.6	18.7	17.2	22.9
Spain	31.0	30.1	40.2	40.5	35.2	38.6	32.3	38.4

ENVIRONMENTAL REPORTS
Perfil Ambiental de Euskadi 2018. Cambio Climático

LINKS TO RECOMMENDED WEBSITES ON THE ENVIRONMENT
https://www.ihobe.eus/publicaciones/perfil-ambiental-euskadi018-cambio-climatico-4
http://www.euskadi.eus/gobierno-vasco/medio-ambiente/
https://xlnets.servicios.euskadi.net/n38a/N38LoginEuskadi.jsp?n38id=-2011791566

VALENCIA



ADMINISTRATIVE, GEOGRAPHIC AND SOCIO-ECONOMIC INFORMATION

Statute of Autonomy: Organic Law 1/2006, of 10 April, on the Reform of Organic Law 5/1982, of 1 July, on the Statute of Autonomy of the Autonomous Community of Valencia
Area: 23 254.49 km²
Length of coastline: 552 km (5.4 % of the Spanish total)
Population (2018): 4 963 703 inhabitants / **Change 2017-2018 (%):** 0.4
Population density (2018): 213.5 inhabitants/km² (Spain: 92.3 inhabitants/km²)
Household income (2016): 13 148 €/inhabitant (Spain: 14 781 €/inhabitant)

Sectoral employment structure (% employed). Year 2018				
Scope	Agriculture	Construction	Industry	Services
Valencia	3.0	6.4	17.1	73.5
Spain	4.2	6.3	14.0	75.5

GDP per capita (€/inhabitant)				
Scope	2005	2010	2015	2018
Valencia	19 574	20 511	20 451	22 659
Spain	21 313	23 215	23 296	25 854

Sectoral structure of GVA (%) (2018 Estimate)				
Scope	Agriculture	Construction	Industry	Services
Valencia	2.1	7.0	17.5	63.9
Spain	2.6	5.9	16.0	66.0

Unemployment rate %				
Scope	2006	2010	2015	2018
Valencia	8.3	22.9	22.8	15.6
Spain	8.5	19.9	22.1	15.3

ENVIRONMENTAL INFORMATION

Nature: Protected land area (ha) (YEAR 2018)

Scope	Total protected land area (ha)		PA	NATURA 2000 NETWORK	MAB	RAMSAR	SPAMI
Valencia	926 543.2	39.8 %	255 281.9	879 794.2	0.0	33 013.8	19.4
Spain	16 613 175.9	32.8 %	7 402 026.9	13 839 629.4	5 570 613.0	282 694.0	51 857.9

Nature: Forest fires (2018)

Scope	No. of events		Total forest area burned (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (< 1ha)	Fires (> 1 ha)		Wooded area	Scrubland and pastures	Total woody area	Total
Valencia	338.0	40.0	3 720.6	303.9	3 416.7	3 720.6	0.0
Spain	5 154.0	1 989.0	25 162.4	4 739.0	16 745.4	21 484.5	3 678.0

Water: Consumption per inhabitant (litre/inhabitant/day)

Scope	2010	2011	2012	2013	2014	2016	2010-2016 (%)
Valencia	157	152	161	158	162	163	3.8
Spain	142	140	135	130	132	136	-4.2

Household waste (kg/inhabitant)

Scope	Total		Mixed waste		Paper and cardboard waste		Glass waste		Mixed containers and mixed packaging	
	2010	2016	2010	2016	2010	2016	2010	2016	2010	2016
Comunidad Valenciana	462.0	448.4	386.6	390.6	15.1	12.6	15.5	16.6	8.2	8.8
Spain	523.6	471.0	416.5	381.3	31.5	21.7	17.3	16.2	13.8	12.7

Air: air quality in relation to the protection of human health.
For every pollutant, percentage of stations classified by range of legislated values (annual mean)

NO_2: annual mean concentration (µg/m³). Year 2017					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
51.9	38.9	5.6	3.7	0.0	54

PM10: annual mean concentration (µg/m³). Year 2017					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2016
14.3	53.1	32.7	0.0	0.0	49

PM2.5: annual mean concentration (µg/m³). Year 2017					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2016
10.0	72.5	17.5	0.0	0.0	40

O_3: maximum daily value of mobile eight-hour averages (µg/m³). Year 2017			
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)	No. of stations 2016
11.3	75.5	13.2	53

Note: LET = Lower Evaluation Threshold; UET = Upper Evaluation Threshold; AVL = Annual Limit Value; LTT = Long-Term Target; TV = Target Value.

Energy: Production of electricity from renewable sources as % of total electricity production

Scope	2011	2012	2013	2014	2015	2016	2017	2018
Valencia	14.4	17.1	19.3	19.1	18.5	16.7	18.9	18.5
Spain	31.0	30.1	40.2	40.5	35.2	38.6	32.3	38.4

ENVIRONMENTAL REPORTS
Informe de Sostenibilidad Ambiental 2014-2020 http://www.avfga.gva.es/documents/162830041/162830178/ISA/528d8d5c-dc14-40f6-b75d-52b27d01284e

LINKS TO RECOMMENDED WEBSITES ON THE ENVIRONMENT
http://www.agroambient.gva.es/es/inicio
http://www.agroambient.gva.es/es/web/medio-natural/publicaciones1
http://www.parquesnaturales.gva.es/va/
http://www.avfga.gva.es/es/
http://www.ivia.gva.es/va/

SOURCES

Administrative, geographic and socio-economic information

Area: National Statistics Institute *"España en cifras"*.

http://www.ine.es/prodyser/espa_cifras/2018/index.html

Population: National Statistics Institute. Official figures from the review of the Municipal Register as of 1 January. Consult online: INEbase/Padrón. Population by municipality / Official population figures of Spanish municipalities: Municipal Register Review / Official figures from the review of the Municipal Register as of 1 January. Last data published: Population as of 1 January 2018 (Royal Decree 1458/2018, of 14 November, declaring the official status of the population figures resulting from the review of the Municipal Register of 1 January 2018.

Population density (2018): Prepared by the authors using the ratio of the population in 2018 to the area of the autonomous community. See sources in previous variables (Population and Surface).

Change in population: Prepared by the authors with population data from 2017 and 2018. See source in previous variable population desnsity.

Length of coastline: *Informe 2014 sobre el estado del Patrimonio Natural y de la Biodiversidad en España*. Directorate General of Biodiversity and Environmental Quality MITECO. Information referring to the Extension of the Public Maritime-Terrestrial Domain.

Household income (Gross disposable household income per capita), year 2016 (provisional data): National Statistics Institute. Consult at INEbase/Economía/Cuentas económicas/Contabilidad Regional de España/Resultados/Enfoque institucional. /Resultados por comunidades y ciudades autónomas. Serie base 2010/Principales resultados. Serie 2010-2016/Renta disponible bruta de los hogares/Tabla 2. Renta Disponible Bruta de los Hogares (Per Cápita).

GDP per capita: National Statistics Institute. Consult at INEbase/Economía/Cuentas económicas/Contabilidad Regional de España/Resultados/Enfoque funcional /Resultados por comunidades y ciudades autónomas. Serie base 2010/ Principales resultados/Tabla 2. PIB y PIB per cápita. Serie 2000-2018.

Unemployment rate: National Statistics Institute. Consult at INEbase. INEbase/Mercado laboral/Actividad, ocupación y paro/Encuesta de Población Activa/Resultados Anuales/Media de los cuatro trimestres del año/Resultados por comunidades autónomas/2.6.42 Tasas de paro por distintos grupos de edad, sexo y comunidad autónoma.

Sectoral structure of employment (% employed by sector of the economy in 2018): National Statistics Institute. Consult at INEbase. INEbase/Mercado laboral/Actividad, ocupación y paro/Encuesta de población activa/Resultados anuales/Media de los cuatro trimestres del año/Resultados por comunidades autónomas/6.31 Ocupados por sector económico, sexo y comunidad autónoma. Porcentajes respecto del total de cada comunidad.

Sectoral structure of GVA (%) (% en 2018): National Statistics Institute. Consult at INEbase/ Economía/Cuentas económicas/Contabilidad Regional de España/Resultados/Serie contable: Serie 2010-2018por comunidades y ciudades autónomas (tablas pcaxis).

Methodological Note: Global values extracted have been obtained by adding the following:

- Agriculture: including Agriculture, farming, forestry and fishery.
- Industry: Includes extractive industries; manufacturing industries, electric power, gas, steam and air conditioning supplies; water supply, sewerage activities, waste management and decontamination.
- Construction: includes construction:
- Services: includes: wholesale and retail; repair of motor vehicles and motorcycles; transport and storage; hospitality, information and communication, finance and insurance, real estate, and professional scientific and technical activities; auxiliary activities, government and defence; compulsory social security; education; healthcare and social services and the arts, recreation and entertainment; repair of household goods and other services. This sector has been estimated as the difference between total GVA and that of the other three sectors (agriculture, industry and construction).

Percentage estimates are part of the GDP estimate, adding the item "Net taxes on products", which in 2018 was 9.5% of GDP. Therefore, GVA represents 90.5% of the total GDP.

Information on the Status of the Environment

NATURE

PROTECTED AREAS (2018)

Data provided by the BDN (Nature Data Bank). Directorate General of Biodiversity and Environmental Quality Ministry for Ecological Transition (MITECO). Regionalised national data as of 31/12/2018.

The autonomous communities of Andalusia, Madrid and Murcia have reviewed these data suggesting slight modifications of the figures. Nevertheless, the decision was taken to incorporate the regionalised national data as of 31/12/2018 prepared by MITECO. It is noteworthy that the surface of the SPAMIs in Andalusia totals 84 072,2 ha (adding 46 194.4 ha of maritime area to the 37 877,7 ha of terrestrial area).

FOREST FIRES

Data on forest fires for 2018 are obtained from the report *"Los Incendios Forestales en España. 1 enero – 31 diciembre 2018. Avance Informativo"*. Ministry of Agriculture, Food and Environment.

The autonomous community of Andalusia has reviewed these data. Access to its web is available to consult further information on forest fires. Nevertheless, in the Environmental Profile of Spain it has been decided to keep the estimated data from MAPA and therefore maintain homogeneity with official figures.

WATER

CONSUMPTION PER CAPITA

Consumption of water per capita expressed in litres per capita per day from the volume of water registered and distributed to homes (Water indicators. Series 2000-2016. Results by autonomous communities and cities. Indicators on water supply by autonomous communities and autonomous cities, main indicators and year. 2.1.1 Volume of water registered and distributed to homes). Consult at INEbase/Agricultura y medioambiente/Agua/Estadísticas sobre suministro y saneamiento del agua.

Methodological Note: Since 2014 the survey has been carried out on a biannual basis. For this reason the data goes from 2014 to 2016.

It is necessary to highlight that the values referring to consumption or production per capita (waste and water) are slightly skewed upwards due to the fact that the real population is not taken into account (human pressure index). This is an important detail in autonomous communities that experience the arrival of large numbers of tourists, such as the Balearic Islands and Canary Islands. The same occurs in the Cities of Ceuta and Melilla where there is a high daily transit of citizens from Morocco.

WASTE

HOUSEHOLD WASTE (kg per capita) REFERRING TO: MIXED WASTE, PAPER AND CARDBOARD WASTE, GLASS WASTE AND MIXED CONTAINERS AND PACKAGING WASTE

Quantity per capita of household waste collected by autonomous communities and classified in mixed waste, paper and cardboard waste, glass waste and mixed container and packaging waste. Information from indicators on urban waste. Series 2010-2016 (population as of 1 July each year according to the latest resident population figures published by the INE). Consult at INEbase/Agricultura y medio ambiente/Residuos y Protección ambiental/Estadística sobre recogida y tratamiento de residuos/Resultados/Recogida de residuos urbanos/Resultados por comunidades autónomas/Indicadores per capita/Serie 2010-2016 Indicadores sobre residuos urbanos/Serie 2010-2016/1. Series 2010-2016 (population as of 1 July each year according to the latest resident population figures published by the INE).

The circumstances related to people transit and tourist presence referred to in "consumption per capita" also incurr in generated waste.

The autonomous communities of Andalusia, Galicia, and Murcia have reviewed these data. Their websites are available for consultation, nevertheless, in the Environmental Profile of Spain it has been decided to keep the data estimated by INE in order to ensure homogeneity with the figures communicated to the EU.

AIR

PERCENTAGE OF STATIONS CLASSIFIED BY RANGE OF LEGISLATED VALUES (ANNUAL MEAN) FOR EACH POLLUTANT YEAR 2017

Source: Ministry for Ecological Transition, 2019. Air Quality Database. Directorate General of Biodiversity and Environmental Quality Data provided on request.

Methodological note: the percentage of stations included in each one the ranges in which the average annual concentration (measured in µg/m³) of each pollutant is classified is presented:

NO_2 Referred to the Lower Evaluation Threshold (LET), Upper Evaluation Threshold (UET) and Annual Limit Value (ALV). These ranges are:

- Concentrations lower or equal to the LET/2 (13 µg/m³)
- Concentrations lower or equal to the LET/2 and LET (13-26 µg/m (13-26 µg/m³)
- Concentrations between the LET and the UET (26-32 µg/m³)
- Concentrations between the UET and the ALV (32-40 µg/m³)
- Concentrations exceeding the ALV (> 40 µg/m³)

PM10: Referred to the Lower Evaluation Threshold (LET), Upper Evaluation Threshold (UET) and Annual Limit Value (ALV). These ranges are:

- Concentrations lower or equal to the LET/2 (10 µg/m³)
- Concentrations lower or equal to the LET/2 and LET (10-20 µg/m (13-26 µg/m³)
- Concentrations between the LET and the UET (20-28 µg/m³)
- Concentrations between the UET and the ALV (28-40 µg/m³)
- Concentrations exceeding the ALV (> 40 µg/m³)

PM2.5: Referred to the Lower Evaluation Threshold (LET), Upper Evaluation Threshold (UET) and Annual Limit Value (ALV). These ranges are:

- Concentrations lower or equal to the LET/2 (6 µg/m³)
- Concentrations lower or equal to the LET/2 and LET (6-12 µg/m (13-26 µg/m³)
- Concentrations between the LET and the UET (12-17 µg/m³)
- Concentrations between the UET and the ALV (17-25 µg/m³)
- Concentrations exceeding the ALV (> 25 µg/m³)

Regarding ozone (O_3), the percentage of stations with sufficient data volume included in each one of the three reference ranges into which the maximum daily values of eight-hour running average are divided is shown, which, for the protection of human health, must not exceed the average values more than 25 times within a term of three years (corresponding to the Target Value, TV) or within a term of one calendar year (corresponding to the Long Term Target, LTT) These ranges are:

- Concentrations lower or equal to the LTT (120 µg/m³)
- Concentrations between the LTT and the TV
- Concentration higher than the TV (120 µg/m³ and 25 exceedances in 3 years)

The number of stations used to perform the evaluation is shown for all pollutants.

ENERGY

PRODUCTION OF ELECTRICITY FROM RENEWABLE SOURCES AS % OF TOTAL ELECTRICITY PRODUCTION

Indicator prepared using the ration of electricity produced from renewable sourced and the total generated in each autonomous community (both in GWh). Information supplied by the Department of Access to Information of the Electricity System of the Spanish Electricity Network (REE) on request.

Environmental Reports

Data provided by the autonomous community submitted by National Focal Points within the EIONET Network.

Links to recommended websites on the environment in the autonomous community

Data provided by each autonomous community submitted to National Focal Points within the EIONET Network.

APPENDIX I. Methodological notes on the indicators

METHODOLOGICAL NOTES ON THE INDICATORS

Appendix I, Methodological Notes, has been published in a separate document due to its length. It can be consulted on the website of the Ministry of Ecological Transition via this **link.**