



# ENVIROMENTAL Profile OF Spain 2014



GOBIERNO  
DE ESPAÑA

MINISTERIO  
DE AGRICULTURA, ALIMENTACIÓN  
Y MEDIO AMBIENTE



# ENVIRONMENTAL Profile Of Spain 2014



Madrid, 2015



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The **Environmental Profile of Spain 2014** is a joint work prepared by the Directorate-General of Environmental Quality and Assessment and Natural Environment (National Focal Point of the European Environment Agency in Spain) of the Ministry of Agriculture, Food and the Environment. The purpose of this report is to offer an overview of the environmental situation in Spain, providing disaggregated information by autonomous communities and with references to the European Union.

In this edition, which is the eleventh published, a new initial section offer the analysis of four environmental themes. Its content describes the thematic areas and presents the initiatives adopted by the administration for the management and environmental improvement. In part two, the report includes 79 indicators, distributed across 18 chapters and presented through descriptive fact sheet. The third part offers information by autonomous community in collaboration with the Autonomic Focal Points of the EIONET Network. Since the 2012 edition, the publication is available for mobile devices.

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# **2014 Environmental Profile of Spain**

*Indicator-based report*




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## PRESENTATION

The year 2015 is a particularly important one for environmental information, with the European Environment Agency's publication of the most relevant report in this field, titled "SOER 2015: The European environment - state and outlook".

This valuable analysis demonstrates that, if European policies to conserve our natural heritage have been implemented successfully, many environmental challenges remain to guarantee the sustainability of our planet, as highlighted in the 7<sup>th</sup> Environmental Action Programme.

Along these same lines, the **The Ministry of Agriculture, Food and the Environment** once again, for another year, publishes the "Environmental Profile of Spain 2014". With this edition, the eleventh, the Profile is consolidated as the most important instrument of environmental information that we offer to citizens.

In addition to providing a snapshot of the state of the environment in Spain, this publication includes the evolution of the indicators over the long term, allowing us to assess the effectiveness of policies carried out and identify areas of improvement.

As every year, the Spanish Environment and Observation Network (EIONET), belonging to the European Network of the European Environment Agency, has contributed to the design and preparation of this report. Employ the best experts and the best available information, allows us to gather solid knowledge, while at the same time, complying with all European-level obligations.

The next Climate Change summit, which will take place in December in Paris constitutes a real global challenge in terms of the environment. We must reach a complete agreement, both regarding contents and participation, not just by governments but also by civil society at large.



Just as the Government has defended since the beginning of the Legislature, the environment can and must be allied with growth. Any effective political and social proposal must be based on a rational and efficient exploitation of natural resources.

The information compiled in the Environmental Profile of Spain 2014 confirms that we're on the right path, towards a more sustainable production model that is more respectful of the environment.



Isabel García Tejerina  
Minister of Agriculture, Food and Environment



## FOREWORD

The analysis of environmental information allows us to measure the success of environmental policies and the challenges that remain. This function is perfectly met with the “Environmental Profile of Spain”, compiling the most relevant aspects of our environment.

The Environmental Profile of Spain is in its 11<sup>th</sup> year, since its first year changes have been made to the structure and content to adapt to the information requirements. In this new edition, I would like to highlight the inclusion of a new section "Thematic Analysis Evaluation of Environmental Aspects" and, by way of summary, the following messages.

Spain is a world leader in biodiversity, enjoying exceptional natural capital which must be preserved and, therefore, known. Thanks to geographic positions of the peninsula and our two archipelagos, we have four of the nine biogeographic regions and three of the five marine regions of the European Union. Because of this, in 2014 Spain was the country with the most land surface in the Natura 2000 Network with 18.9%, followed by France (10.0%). It was also the second country in terms of marine surface in the network, with a total 22.5%, behind the United Kingdom (23.3%).

The conservation of our natural capital is strengthened through the protection of spaces: in 2014, 27.2% of our land surface was included in Natura 2000 Network. In July 2014, the regulation was approved to designate 39 marine spaces as Special Protection Areas for Birds (SPAB), which alongside 10 Sites of Community Importance (SIC) of the network, means that in 2015 the marine surface integrated with the Natura 2000 Network accounts for more than 8% of the total, a percentage very close to the world commitment of 10% for the year 2020, established in the Convention on Biological Diversity. And in terms of areas protected by international instruments, with these latest inclusions, Biosphere Reserves account for 9.5% of Spain's land surface.

The conservation of spaces and species has been reinforced by the development of strategies of conservation of the fauna and flora, to integrate all the ecological components of our territory, fostering their protection and improving integration in the environment.

With regard to our coasts, the more than 10,000 km of coastline in our country are another component of primary importance. In addition to their exclusive natural wealth, we must add that they offer support to many settlements of our population where economic activities related to tourism, fishing, industry and marine transport stand out.

It is necessary to articulate management models for the coastal areas, identifying areas through demarcation (which now reaches 96% of the coastal length). In October 2014, the General

Regulation of Coastal Areas was approved, an instrument developed by the Coastal Areas Act and the Protection and Sustainable Use of Coasts Act. With this regulation, the environmental protection and the sustainable development of the coasts are guaranteed. This is how a balance is found between a high level of environmental protection and an activity compatible with the impulse of economic activity and the generation of employment.

Within the framework of the firm commitment of this Ministry to the fight against climate change, projects have been set in motion to reduce emissions in all sectors: transport, energy efficiency in construction, agriculture and waste. In addition, for the first time in Spain, measures of adaptation to climate change have been presented, with specific projects on the coasts, in the public hydraulic domain and National Parks. Among them are the regeneration of beaches, protection of wetlands or swamps, restoration of dunes and lagoons, habitats or the adaptation of forest areas. The set of measures destined to minimize risks and impacts, along with the measures of mitigation developed to limit the accumulation of the greenhouse gases in the atmosphere set the scene for the fight against climate change. In December 2015, Paris will host the Climate Change Summit (COP21) which will serve as a base to lay down a global action in which all countries will be involved, in the fight against climate change and whose agreements must be derived from realistic and effective commitment.

Society is more and more conscious of the importance of air quality and that its deterioration directly affects people's quality of life and that of ecosystems. The exceeding of the legal amounts for  $\text{NO}_2$ , ground level ozone and particulate matter also constitutes a challenge in this respect. However, average air quality in Spain offers signs of improvement, according to data compiled in the Profile, in great measure thanks to the development of the National Plan for Air Quality and Atmosphere Protection 2013-2016, which allows for the Ministry of Agriculture, Food and Environment to provide the impulse for action in relation to air quality, to complement action plans approved by other public administrations.

Emissions for all the principal atmospheric pollutant gasses considered ( $\text{SO}_2$ ,  $\text{NO}_x$  y  $\text{NH}_3$ , COVNM, CO and  $\text{CH}_4$ ) have been reduced except  $\text{NH}_3$ . Following this line, primary particle emissions, one of the most dangerous pollutants for human health, was also reduced in Spain by more than 32% between 2000 and 2013.

The data collected in the Profile related to the use of water in this edition are particularly positive. In Spain, between 2004 and 2012, consumption of water from the public supply network has decreased by 17.4%. Citizen awareness and campaigns to save water have seen the average water consumption in homes drop in 2012 to 137 litre per inhabitant per day, 17.5% less than in 2005.

Our natural environment is exceptional, but our environmental commitment is what allows us to continue to enjoy it. For that, it is necessary to count on the involvement of society and the industrial and business sectors. Today, economic systems are assuming new options for growth and more efficient development, based on reducing carbon dependence, managing resources better and minimizing waste and emissions.

The green economy has included in its scheme the concept of a circular economy (system of production and consumption that reduces the losses it generates and reincorporates in the production process the contents of waste): Between 2008 and 2012 Spain reduced its consumption of material by almost 50%.

The energy intensity of our economy is less than that of the EU-28. In 2013, Spain was the country in Europe with the seventh-lowest intensity, and we are getting away from economic growth of consumption of resources.

Domestic waste generation has on balance been positive, with the 449 kg of waste per inhabitant generated in Spain placing us at fourteenth among the EU-28 in 2013. The Waste Prevention Programme and the State Waste Management Framework Plan are instruments that have allowed recovery and recycling rate of packaging waste to exceed established objectives.

All these data show that we are advancing towards a more efficient consumption of materials, the low-carbon economy and economic development that is compatible with the environment. But before these moderate, though definitive steps towards economic recovery, we must intensify our efforts, and this is our major challenge still ahead.

Our patterns of consumption, use and management of resources must continue to improve so that the protection of our natural heritage goes hand in hand with, and reinforces, our economic progress.

To conclude, I wanted to express my appreciation to all the technicians that have participated in this report. The best technicians and experts in each area, to whom we owe the analysis and publication of these achievements, won through our common effort in the field of the environment; to them we also owe for their presentation through new, modern technological



tools that allow for easier, more comfortable and more efficient consultations.

For their effort, and to all the readers for their contribution to these good results, thank you.



Pablo Saavedra Inaraja

State Secretary for the Environment.



## INTRODUCTION

Our experience over ten years which has accompanied us in preparing this new publication of the Environmental Profile of Spain 2014 has made us take it on in a different way. In addition to a well established process and the support of an organized technical team that is more and more involved, we must add the need to incorporate new challenges and improve the form and content of the report.

Maintaining the same objective as every year, that is, to present the environmental situation in Spain, with disaggregated data by autonomous community and with reference to the European Union, this new publication of the Environmental Profile of Spain includes a new chapter named “Thematic analysis of environmental aspects”. It consists of a block of information with a detailed study of a series of environmental and sectoral issues. This is something new in the 2014 edition including four chapters: Air Quality, Adaptation to Climate Change, Coasts and Marine Environments and Nature. The idea behind this section is to focus on different issues in each successive edition, issues that for their special interest or relevance at the time warrant a more detailed and comprehensive study.

The content of each chapter follows an established structure. It will maintain the necessary flexibility so that the authors or those responsible for defining and preparing the final content may adapt it to the information available and describe the most significant aspects according to their criteria. This initial guide is focused on only three sections which are considered sufficient to describe and analyse each issue in a simple and understandable way that can be summarized as follows:

- Carry out an analysis of the issue or sector, describing the issue and the trends in terms





of the most significant variables allowing for an understanding and interpretation of their evolution. Where possible, the information may be accompanied by indicators, including references to those described previously in each chapter of the Profile.

- Evaluate the incidence of the main economic and social sectors that affect and condition the issues analysed, describing and quantifying the effects insofar as possible.
- Describe the policy actions adopted and those intended for the short, medium and long term, and ultimately, present the policy advances and social response.

Another new feature of this edition is the number of chapters over which the indicators are spread, with the 16 of last year being extended this year to 18 in the current publication. Basically, this is due to a restructuring of the content, which have been amended to included two new chapters: “Economy and society” and “Atmospheric emissions and climate change”.

The content of the former has, in other years, been included in the chapter “General Framework” (and which disappears as such), meaning that this is more of a change in the naming of chapters than a new addition. This change sees all the information presented in the form of indicators being included in the same chapter.

The second new chapter brings together information on emissions and the atmosphere, which in previous editions was included in the chapter covering air quality and climate change, a global problem which warrants being looked at it in its entirety in a specific section of the publication.

In terms of the indicators, aside from their number (79 in this edition) there are no major changes in relation to previous editions. Each chapter begins with a brief introduction accompanied by



an outline in graphic form incorporating the key messages that subsequently accompany each of the indicators. This is a summary of that which is later included for each indicator, but in this way, extracted and presented as a set, offers us a synthesis of the key messages, which proves very useful as a presentation of the environmental situation in Spain.

For its part, each indicator includes its corresponding graph, an explanatory analysis based on the information available which may include references to the autonomous communities or the European Union and one or several highlighted key messages that synthesize those aspects of the indicator to be highlighted. There is also a section with a definition of the indicator, notes for clarification, the source of the data and links to websites where one can find further information.

There is an additional chapter dedicated to the autonomous communities which complements the information on them included with the indicators. Thus the state information is broadened and the analysis is enriched. In terms of presentation, the descriptive file format already adopted in previous editions is maintained, but to simplify the content and improve presentation, and after a process of consultation with the Spanish Environment and Observation Network (EIONET), this edition has been structured in the following six sections: Geographic and Administrative Information, Socio-Economic Information, Information on the State of the Environment (soil, nature, agriculture, waste, water, air and energy), Reports on the State of the Environment and Sustainable Development of the Autonomous Community, Links to websites of interest on the environment of the autonomous community and other data or relevant information.



From the National Focal Point of the Spanish EIONET network, we trust that this report will be well received by all readers and that it will reach the widest audience possible. We are also sure that we will receive comments and suggestions in relation to it, so that we may incorporate, in future editions, the corrections and suggestions that users send to us. Only in this way can we be sure that we will continue to grow with the necessary quality to influence, through knowledge, the decision making required for the protection of the environment on a daily basis.





# **Part 1.**

# **THEMATIC ANALYSIS: EVALUATION OF ENVIRONMENTAL ASPECTS**

**Air Quality**

**Adaptation to climate change**

**Coasts and marine environment**

**Nature**





# AIR QUALITY. 1.1

**“Air Pollution” is the presence in the atmosphere of matter, substances or forms of energy which cause serious damage or pose a risk or hindrance to the health and safety of people, the environment or any other element of any kind**



**Poor air quality affects the quality of life of those who suffer from respiratory problems and is the leading environmental cause of premature death**

The concept of **“air quality”** gives an idea of the degree of purity of the air we breathe. Good or poor air quality depends on the concentration of polluting elements contained in the air. An **“air pollutant”** is any element, substance or form of energy causing serious damage or posing a risk or hindrance to the health and safety of people, the environment or any other element of any kind.

**Pollutants** are emitted directly into the atmosphere as a consequence of **human activities**, as well as **natural processes** (natural fires, volcanic eruptions, emissions from vegetation, sand particles from the Sahara, etc.). In addition to all this, we must also take into account the formation of secondary pollutants that may be generated by means of chemical reactions among primary pollutants.

There is a great number of atmospheric pollutants that have different repercussions for the environment and human health. The most common pollutants are those originating in energy production and transportation, such as carbon monoxide (CO), sulphur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>, NO y NO<sub>2</sub>) and primary particulates. Others, such as ammonia (NH<sub>3</sub>) are mainly generated in the farming and livestock industries. Among secondary pollutants we must highlight ozone (O<sub>3</sub>), which has negative effects on the troposphere due to its high oxidizing properties and the particles generated by the reaction and condensation of other pollutants. Heavy metals and volatile organic compounds are also worthy of highlighting.

Regarding the effects on **human health**, according to the communication of the European Commission released in December 2013, poor air quality affects the quality of life of those persons suffering from asthma or respiratory problems and it is the leading environmental cause of premature death in the EU.

According to the 2005 Air Quality Guidelines of the World Health Organization (WHO), several tests performed on ozone (O<sub>3</sub>) and particulate matter (PM) showed that there are risks for human health at concentrations present today in many cities in developed countries. They also state that

air pollution has an increasing range of negative effects on human health and such problems tend to appear in lower concentrations. Moreover, the WHO stresses that, as our knowledge regarding the complexity of the mixture of air pollutants increases, it is now more evident that there are limitations to the monitoring of air pollution by means of guidelines for individual pollutants.

Our **ecosystems** are increasingly affected mainly by 1) acidifying substances, such as nitrogen and sulphur oxides, which generate acid rain and cause ecological alterations and loss of biodiversity; 2) eutrophying substances, such ammonia and nitrogen oxides, which reach the soil and water and generate an excess of nutrients causing "eutrophication" phenomena which alter terrestrial and aquatic ecosystems and cause a loss of biodiversity; 3) tropospheric ozone, which causes physical damage to crops, forests and plants, as well as reducing their growth.

Pollutants associated with water quality do not match the main gases causing the greenhouse effect; however, it is necessary integrate air quality improvement policies and climate change policies so as to avoid taking positive measures for one issue which may have a negative impact on another issue.

The **concentration** of certain pollutants in the atmosphere depends on the following **factors**:

- Several pollution emission sources: point channelled emissions (industrial chimneys) and non-channelled emissions (slurry reservoirs), diffuse sources (traffic, agriculture, etc.) and even fugitive emissions (from dry bulk cargoes).
- Fluctuation of the emissions of pollutants following certain time patterns: industrial activity periods, times with heavier traffics, fertilization periods for crops, etc.
- Weather conditions: wind, rain, temperature and atmospheric stability determine the conditions of dispersion of pollutants.
- Geographic location: it may improve or worsen dispersion conditions. Certain places are particularly prone to temperature inversions which cause difficulty for the generation of mixtures in the atmosphere.

The **assessment of air quality in Spain** is conducted annually from data compiled through the air quality networks managed by the Autonomous Communities and, in some cases, by local authorities. Today, these networks amount to more than 600 fixed measurement stations distributed throughout the Spanish territory. The number of analysers reaches more than 4,000. Besides, they have air quality simulation models to support assessment.

In order to assess the air quality for each pollutant, the territory is divided into quality areas of homogeneous air. Within each area the concentration of pollutants may be measured by means of one or several stations. Air quality may also be assessed by means of models, as long as the concentration of pollutants is significantly lower than the regulated values.

Finally, the position of said area in relation to the quality objectives of the regulations is monitored. The criteria establish that if just one station exceeds the regulated values, it must be considered that the area where such station is located does not comply with the regulated value as a whole, even though there may be others stations where such values are not exceeded.

**Ecosystems are mainly affected by acidifying and eutrophying substances and ozone**

**It is necessary to integrate air quality improvement policies and climate change policies**

**The concentration of a certain polluting element depends on different factors such as the sources of emissions, the time patterns of such emissions, weather conditions and geographical location**

**The assessment of air quality allows us to determine compliance with regulations and its evolution over time, as well as to ascertain whether air quality measures and plans applied have been effective or not**

### Assessment of Air Quality in Spain 2013



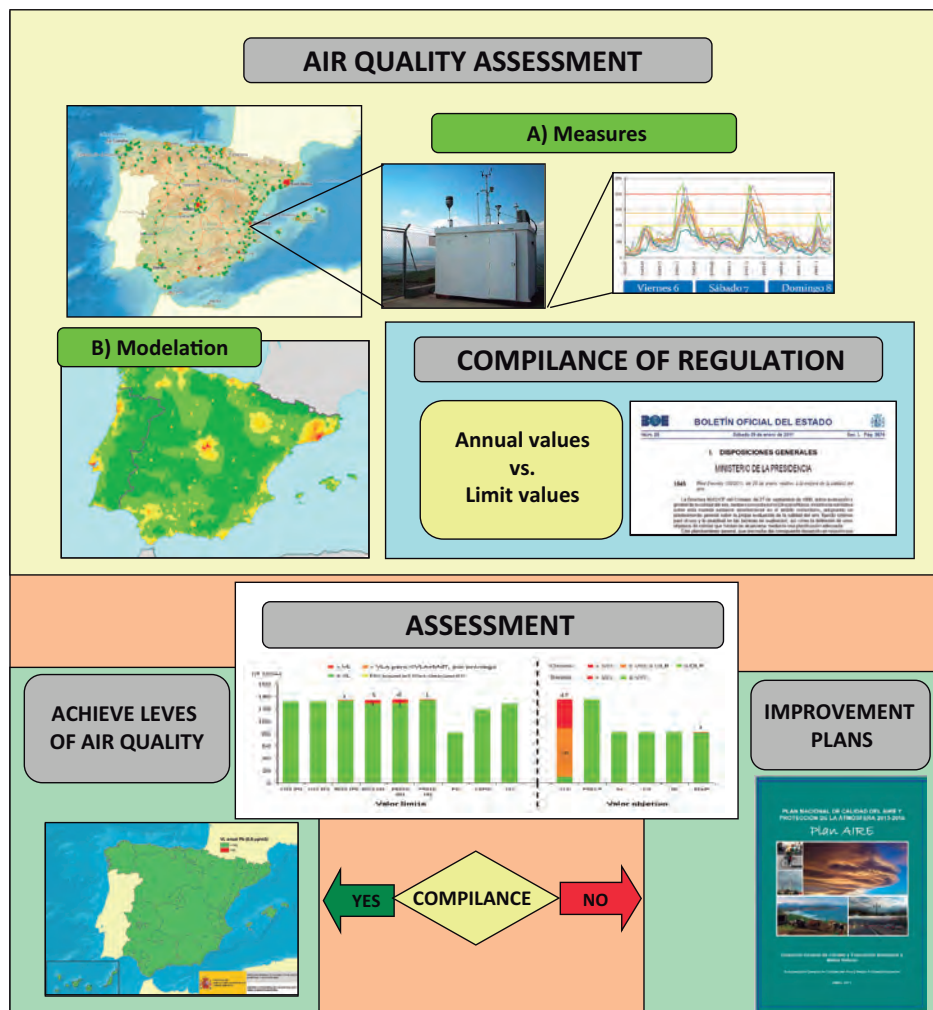
[http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/Informe\\_evaluacion\\_calidad\\_aire\\_Espa%C3%B1a\\_2013\\_tcm7-345101.pdf](http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/Informe_evaluacion_calidad_aire_Espa%C3%B1a_2013_tcm7-345101.pdf)

The air quality in the last few years shows a clear **tendency towards improvement**, although there are still problems ( $\text{NO}_2$ ,  $\text{PM}_{10}$  y  $\text{O}_3$ )

### Air quality management

When a certain area exceeds regulated values, such area is required to prepare an **air quality improvement plan** which includes measures aimed at reducing pollution levels.

In order to prepare these plans and design efficient measures, it is important to conduct a prior study on the contribution of pollution sources. Besides, it is important to use modelling tools which simulate the application of the different measures proposed.



The assessment of air quality and the analysis of its evolution over time will allow for the annual monitoring of compliance with current regulations as well as for detecting whether the air quality measures and plans implemented have been effective.

### Current situation of air quality levels in Spain

The application of the regulations regarding emissions and air quality has contributed to a clear improvement in air quality in recent years, particularly regarding pollutants such as  $\text{SO}_2$ ,  $\text{CO}$ ,  $\text{Pb}$  o benzene ( $\text{C}_6\text{H}_6$ ). However, some of the regulated values are still exceeded in some areas of the Spanish territory where additional efforts are required. The following chart shows the number of areas where values over those legally provided were exceeded for the different polluting substances in 2013, year of the last official assessment.

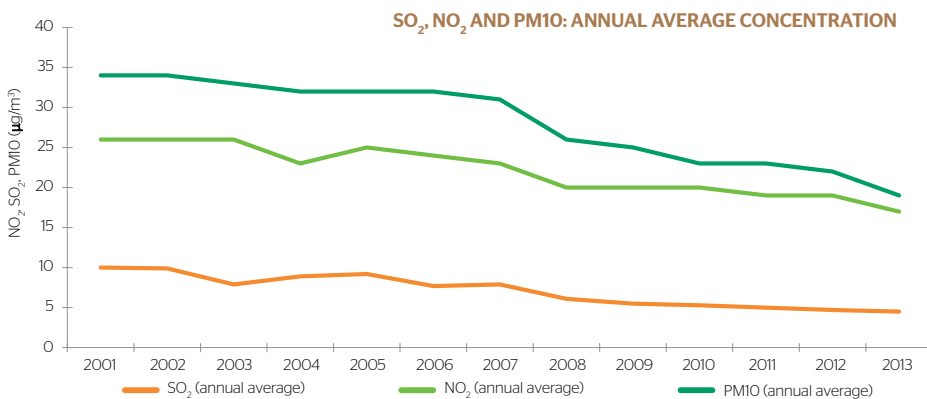




The evolution of the main pollutants is as follows:

### Evolution of air quality in Spain

- SO<sub>2</sub>: there is a clear trend towards a decrease in average levels over time, which is particularly significant from 2008 on, year in which the National Plan for the Reduction of Large Combustion Plants came into force. The highest levels are recorded at industrial stations, generally affected by thermal plants, refineries, ports, etc.
- NO<sub>2</sub>: there is also a trend towards reduction, particularly noticeable from 2008 on which may be the consequence of reduced activity brought about by the economic crisis and the implementation of air quality improvement plans in major cities. However, increases are still recorded in some of the main urban areas.
- PM10: even though regulated values are still exceeded in some areas in Spain, there is a clear trend towards the reduction of average levels over time, particularly from the year 2007 on. In 2013, there was also a significant improvement.



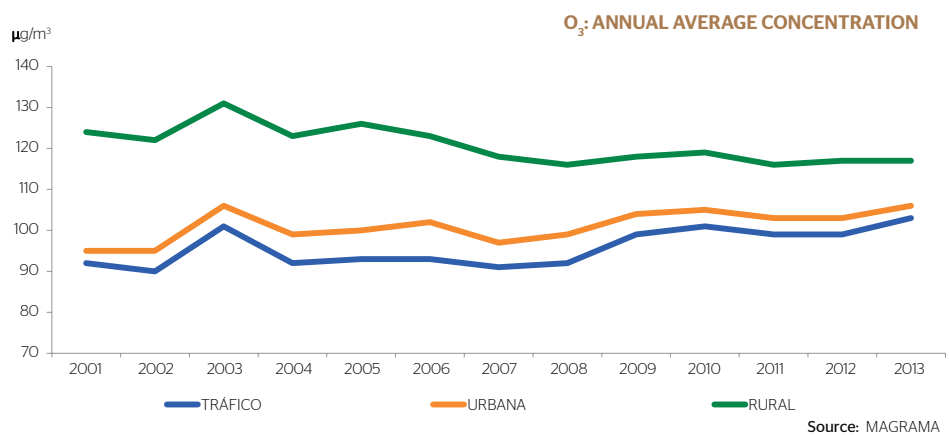
Source: MAGRAMA

### Assessment of Air Quality in Spain



[http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/calidad-del-aire/estudios/Libro\\_Aire.aspx](http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/calidad-del-aire/estudios/Libro_Aire.aspx)

- $O_3$ : due to its complexity, ozone requires a specific analysis. The general trend shows that its concentration in the troposphere is increasing. Weather conditions in Spain, with high levels of solar irradiance, contribute to the formation of such pollutants due to chemical reaction with its precursors,  $NO_x$  and volatile organic compounds which may have a human or natural origin. The chemical composition of this pollutant is complex due to the high volume of precursors intervening and because of the fact that it is a nonlinear chemical dynamic. This implies that the reduction of one or several precursors does not always cause a reduction of  $O_3$ . In general terms, there are two areas where the limiting factor are the volatile organic compounds or VOC (urban areas) and areas where the limiting factors are the  $NO_x$  (rural areas).



Besides, recent years have seen an upward trend regarding  $O_3$  levels in cities. This may be caused by the reduction of  $NO_x$  emitted by traffic, since  $NO$  does not react with  $O_3$ , thus locally reducing it.

The volumes of  $O_3$  corresponding to regional or cross-border emissions and those being generated locally are currently being assessed, since air quality managers can only act on the latter by means of the implementation of local air quality improvement measures.

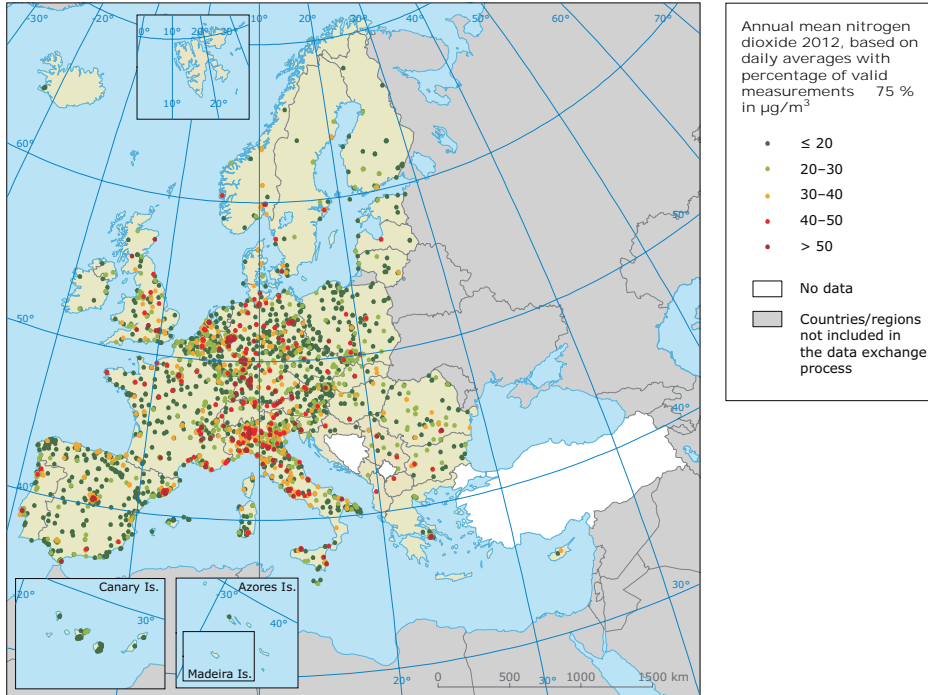
The main issues to be considered focus on the excess of  $NO_2$  in relation to regulated values (in urban areas), as well as the values of particulates (in some urban and industrial areas). It must also be pointed out that tropospheric levels of  $O_3$  are very high, which is a characteristic shared with other countries in Southern Europe, subject to solar radiation.

The regulated values of other pollutants such as  $PM_{2.5}$ , lead (Pb), benzene ( $C_6H_6$ ) and carbon monoxide (CO) have never been exceeded. Regarding other regulated pollutants (arsenic (As), cadmium (Cd), nickel and (benzo(a)pyrene) (B(a)P)), levels have been exceeded only sporadically. However, it is important to monitor the evolution of  $PM_{2.5}$  and B(a)P, since -as it is being observed- the use of biomass without the necessary systems for the reduction of these polluting gases is increasing; such gases originate in the incomplete combustion of biomass and other solid fuels.

**The situation in Spain is similar to that of other European countries, even though it is affected by its weather and geographical conditions**

## Comparison with Europe

The situation in Spain is similar to that of other countries in the European Union with which it shares the same legal obligations regarding assessment and management, although it is affected by its own geographical and weather conditions (high solar irradiance, atmospheric stability, low rainfall values, proximity to the African continent, etc.).



Note: Red and dark red dots correspond to exceedances of the annual limit value ( $40 \mu\text{g}/\text{m}^3$ ).

## NO<sub>2</sub> Assessment. EEA. Year 2012

### Main sectors with emissions affecting air quality

1) **Transport (land, sea and air transport).** Road traffic and port- and airport-related activities have a direct effect on NO<sub>x</sub>, particulates and VOC levels.

The establishment of emission limit values (ELV) for CO, hydrocarbons, NO<sub>x</sub> and particulates in the sub-sector of land transport has been carried out in the European Union by means of a series of regulatory provisions known as “EURO standards” (EURO1 to EURO6). These ELV must be complied with so that any vehicle may be approved before its marketing in the European Union. From September 2014 all vehicles manufactured must comply with the ELV for EURO6 provided in Regulation 715/2007/EC. However, actual emissions of NO<sub>x</sub> from diesel vehicles, measured during actual driving conditions, exceed by several times the ELV of standard EURO6. That is also the case for vehicles certified in accordance with standards EURO5 and EURO4. For that same reason, the expected reduction of NO<sub>x</sub> emissions has not resulted in an improvement of NO<sub>2</sub> concentration in the air of the major European cities.

However, this is not the only regulation related to the transport sector. For example, the sulphur concentrations of sea fuels or emissions originating from internal combustion engines of non-road mobile machinery are also regulated.

## Air Quality in Europe (EEA)

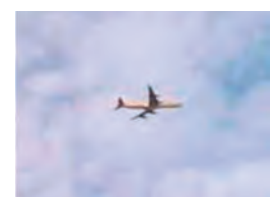
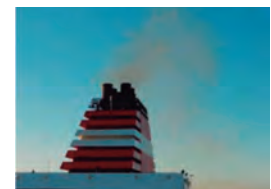
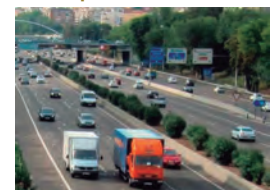
1.1

AIR QUALITY



<http://www.eea.europa.eu/publications/air-quality-in-europe-2014>

### Transport



### Industry



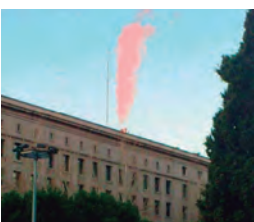
### Agriculture and Livestock Farming



### Construction



### Residential-commercial



2) **Industry.** Due to the great variety of industrial processes and to the fact that emission may originate in several stages of such processes, the number of pollutants emitted by this sector is high. Among them we must highlight particulates,  $\text{NO}_x$ ,  $\text{SO}_2$ , metals and volatile organic compounds since they are related to air quality regulations.

The Industrial Emissions Regulation, approved by Royal Decree 815/2013, of 18 de October, establishes measures for avoiding, or at least reducing, the emissions of these activities to the atmosphere. For this purpose, it governs the procedure for obtaining written authorisation (**Integrated Environmental Authorisation**) in which the environmental conditions required for its exploitation are established and in which, among other aspects, the emission limit values based on the Best Techniques Available (BTA) are stated.

3) **Agriculture and Livestock Farming.** This sector is the principal source if emissions of nitrogen compounds, particularly  $\text{NH}_3$ , mainly due to the use of fertilisers for crops, the management of manure and the open burning of biomass and other similar waste.

The implementation of good agricultural practices is key to minimize this problem. The National Plan for Air Quality and Atmosphere Protection 2013-2016 (AIR Plan), prepared by the Directorate-General for Environmental Quality and Assessment and Natural Environment of the MAGRAMA, includes the promotion of said practices as the measure for the reduction of emissions from this sector.

4) **Construction.** This sector particularly affects particulate levels but also  $\text{NO}_x$  levels, as a consequence of the operation of heavy machinery, fuel oil power generators, etc., and the concentration of major traffic flows of heavy vehicles. It also contributes to the emission of VOCs as a consequence of the use of paints and solvents.

The AIR Plan considers the adoption of good practices aimed at reducing construction emissions, which cause many issues in the affected area, particularly in urban areas.

5) **Residential - commercial.** Related to the emission of gases from **combustion**, both for the generation of power and for the heating and obtaining of hot sanitary water.

Many heating installations within the sector are regulated by virtue of Royal Decree 1027/2007, of 20 July, approving the Regulation of Heating Installations for Buildings (RITE, as per the Spanish acronym); however, this regulation does not govern emission limit values, it simply set outs requirements for the compliance of a certain energy performance. Therefore, it is key to approve specific legislation for the regulation of domestic heaters which guarantees the operation of these installations in a safe an efficient manner, especially where solid fuels are used. It must be highlighted that said regulations are implemented in line with the provisions of the aforementioned AIR Plan.

On the other hand, the European Union has also established, by means of Directive 2001/81/EC, the maximum emission ceilings (from 2010) for total emissions of  $\text{SO}_2$ ,  $\text{NO}_x$ , COV and  $\text{NH}_3$  for each Member State. Member States must prepare programmes for the reduction of these pollutants so as to comply with the values (or ceilings) established by the Directive; such programmes must be revised and updated periodically.

### Political actions and forecasts: description of political developments and social response

In order to improve air quality through different means, each with their own objectives:

- **Political Action (EU):** development of new legal tools such as the recently approved "Air Package" which includes new regulation proposals (new Directive on National Emission Ceilings, new Directive on Medium-Sized Combustion Installations and ratification of the Gothenburg Protocol), in addition to ensuring compliance with current Air Quality Directives.
- **Actions on a national scale by the General State Administration:** development and amendment of the basic legal framework and preparation of national plans on air quality such as the AIR Plan approved in 2013, which promotes actions on air quality complementary to those action plans approved by other public administrations.
- **Regional/local actions:** preparation of regional or local action plans; implementation of technical improvements available through integrated environmental authorisations; approval of action protocols for pollution episodes; promotion and improvement of transport and public services; establishment of low-emission areas; support for the renewal of the vehicle population; encouraging the use of more environmentally friendly vehicles; information and raising awareness among citizens; restriction of traffic in city centres; regulation of speed limits and traffic flows and traffic in urban and metropolitan areas.
- **Social response:** because of the general concerns about air pollution, the different administrations must, within the scope of their respective competences, raise awareness among citizens and improve the information available on air quality. Among the tools prepared to do so, we must highlight the **air quality viewer** by the MAGRAMA, which allows citizens to check information on air quality at a national level regarding pollutants with regulated values for human health protection: SO<sub>2</sub>, NO<sub>2</sub>, PM10, PM2.5, O<sub>3</sub>, Pb, C<sub>6</sub>H<sub>6</sub>, CO, As, Cd, Ni and B(a)P. Provisional data in real time may be checked, as well as the historical evolution of the air quality assessment. The viewer data is obtained from the information sent to the MAGRAMA by the different national, regional and local networks.

Regarding **awareness**, it is important to convey to society the risks that poor air quality poses to human health but also that a certain behaviour on the part of citizens may contribute to the reduction of air pollution.



#### Analysis by:

Air Quality Department. Sub-directorate General of Air Quality and Industrial Environment. Directorate-General for Environmental Quality and Assessment and Natural Environment. Ministry of Agriculture, Food and Environment.

### Recommended websites

#### MAGRAMA Website for Air Quality

<http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/calidad-del-aire/>

#### AIR Plan

[http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/PLAN\\_AIRE\\_2013-2016\\_tcm7-271018.pdf](http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/PLAN_AIRE_2013-2016_tcm7-271018.pdf)

#### Regional and Local Improvement Plans

<http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/calidad-del-aire/gestion/planes.aspx>

#### Air Quality Viewer



<http://sig.magrama.es/geoportal/>

1.1

AIR QUALITY



# ADAPTATION TO 1.2 CLIMATE CHANGE

**Spain is very vulnerable to climate change and, as a consequence, the development of an adaptation policy is one of the main priorities.**

**The Spanish National Climate Change Adaptation Plan (PNACC as per the Spanish acronym) is the reference framework for coordination between Public Administrations regarding assessment activities for impacts, vulnerability and climate change in Spain.**

## Adaptation to climate change

The warming of the climate system is unmistakable and forecasts for the following decades show, in every scenario, an increase of temperature and other changes the intensity of which will depend on the level of greenhouse gas emissions into the atmosphere and other influences that human actions exert on the climate system.

**Adaptation** is a complementary line of action against climate change as necessary as mitigation which aims at minimizing impacts and strengthening the resilience (or recovery capacity) of all social and economic sectors, resources, territories and ecological systems which are vulnerable to the effects of climate change.

Over recent years, the volume of national and international works developed and published on impacts and adaptation have grown exponentially, thus reflecting the interest and priority with which this line of action against climate change is dealt with at every level.

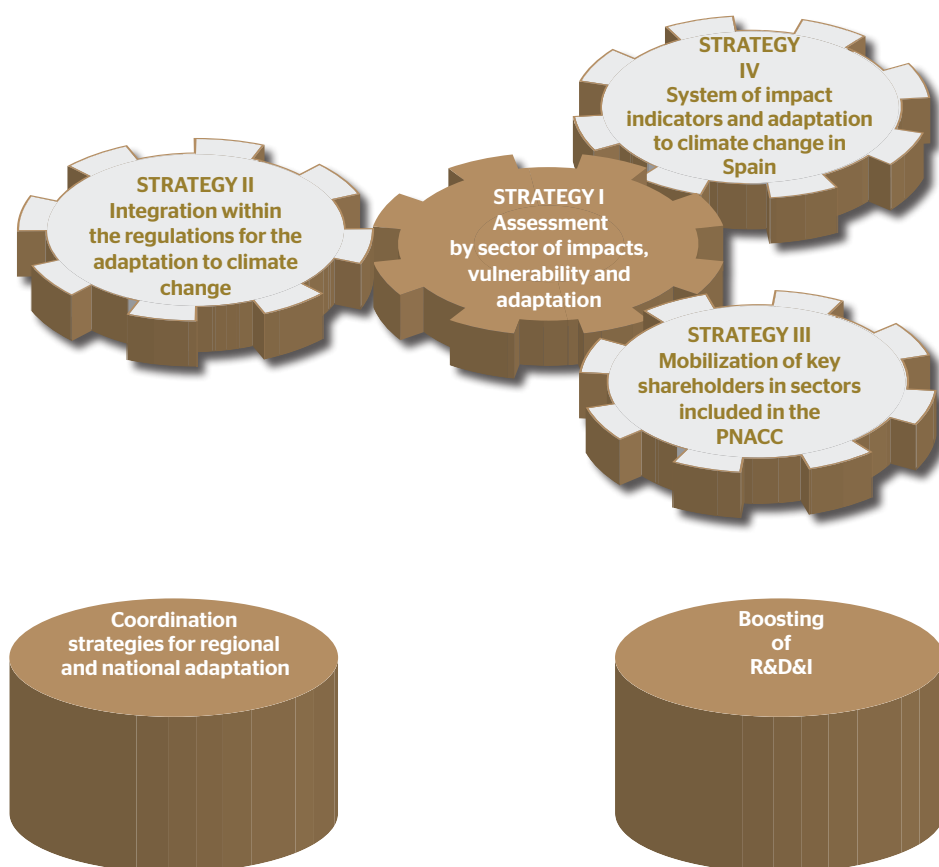
The **purpose** of adaptation is to integrate in the planning and management of all those social and economic sectors, resources, territories and ecological systems which are vulnerable to climate change. This is a very complex purpose due to the convergence of competencies and responsibilities across multiple management levels -local, regional, national and European-, the interaction of public and private sector and the many agents and stakeholders involved. Besides, it is also difficult to adapt to particular impacts of climate change originating from other pressure factors which, altogether, contribute to the so-called global change. This complexity requires a high level of knowledge and governance for adaptation, where it is essential to orchestrate, among others, the following elements:

- **A systematic observation programme which allows us to describe the climate and its evolution as well as the effects of climate change.**

- A set of climate scenarios by region which forecast the climate of the future based on plausible social, economic and environmental evolution hypotheses.
- A R&D programme which allows for the improvement of the knowledge on climate change and its effects on different vulnerable sectors.
- A plan for the development of assessment methods and tools by sector on impacts and vulnerability.
- A structure for the transfer of scientific and technical knowledge.
- A proposal for, and assessment of, adaptation measures that may be appropriate.
- A coordination strategy among all relevant stakeholders.
- An information, communication and awareness programme address to stakeholders involved and to the general public.
- A participation structure for the involvement of all agents in the adaptation process.
- A follow-up and assessment programme for impacts, vulnerability and adaptation.

The **Spanish National Climate Change Adaptation Plan (PNACC)** is the framework in which all these elements are combined in a structure comprised of four strategies and two lines of action.

### Structure of the Spanish National Climate Change Adaptation Plan



This structure supports the so-called “**adaptation cycle**”, an ongoing and interactive process in which its different elements -strategies and lines of action- work and produce results which are combine to shape the adaptation process as a whole.

The ultimate purpose of the **PNACC** is the integration of measures for the adaptation to climate change based on the best knowledge available in all sectoral and managerial policies which may be vulnerable to climate change so as to contribute to sustainable development.

1.2

ADAPTATION TO CLIMATE CHANGE

The **PNACC** is based on four strategies and two lines of action.

<http://www.magrama.gob.es/es/cambio-climatico/temas/impactos-vulnerabilidad-y-adaptacion/default.aspx>

The “**Adaptation Cycle**” is an ongoing, multiple and interactive process in which the different elements (strategies and lines of action), take place in logical sequences thus shaping the adaptation process.

It may be deemed that the “**adaptation cycle**” starts with the generation and analysis of data, information and knowledge - **Strategy I** - on climate scenarios by region, assessment by sector of impacts, vulnerability and identification of adaptation options, cost-benefit assessment and other areas. This knowledge, which may result in tools and expert information systems, is transferred by means of participation and mobilization processes for stakeholders - **Strategy II** - to the persons responsible for the planning and management of each sector.

The “**Adaptation Cycle**” continues when the requirements for adaptation to climate change are expressly integrated within the regulations and instruments governing each particular sector or within other cross-sectoral planning instruments - **Strategy III** -. The integration with regulations and the transfer of information and knowledge also include the preparation of technical guidelines, guides, good practice manuals, etc., for the corresponding sectors, as a support tool for an effective integration of the adaptation to the climate change.

-**Strategy IV**- the indicator system for impacts, vulnerability and adaptation- adds the necessary element for the proper follow-up, as well as providing a valuable information for the purposes of dissemination and awareness.

Each strategy may act as a catalyst for the development of actions in the other strategies, so the engine moving the “adaptation cycle” is multiple, interconnected and it is subject to different impetus factors. The appropriate governance is key for the harmonization of the “adaptation cycle”.

The **two basic lines** of action for the (i) coordination among administrations and (ii) boosting of R&D&I assume, on the one hand, the complexity of the institutional structure in Spain and the division of competences within the sectors most vulnerable to climate change and, on the other hand, the major role not only of research but also of innovation and the development and implementation of adaptation technologies.

### Principal aspects to be considered

During the last few years, within the framework of the PNACC, many works on the assessment of the effects of climate change as regards those sectors deemed most vulnerable have been carried out. Among them, the following must be highlighted:

#### Water resources

Using forecasts for climate change scenarios for Spain over the 21<sup>st</sup> century, the impacts of climate change on water resources in natural systems, water demands (urban and for irrigation), the exploitation systems of water resources and the ecological conditions of water masses have been analysed.

The results show a general reduction of water resources in Spain, which increases as the 21<sup>st</sup> century progresses; this fact implies reductions in annual runoff volumes for Spain amounting to 8% for 2011-2040, 11-16% for 2041-2070 and 14-28% for 2071-2100, depending of the emissions scenario of the IPCC considered.





## Biodiversity

An assessment of the effects of the climate change on the potential distribution of biodiversity in mainland Spain during the 21<sup>st</sup> century.

Up to 317 vertebrate species and 227 plant taxons have been analysed. The analysis and interpretation of data include an assessment of the vulnerability of each one of the taxons, an analysis of the evolution of optimal climate areas, both as regards surface and location, a series of joint analyses by taxonomic groups (mammals, reptiles, etc.), which provide a geographical description of possible future trends in terms of winning and losing areas, and specific for protected natural areas.

## Coastal areas

The project "Climate Change on the Spanish Coast" (C3E) has developed a series of tools - available freely for all interested parties- which support the integration of the adaptation to climate change in the planning and management of coastal areas and those activities developed within those plans. These tools include an *online* viewer to check results, the *online* database of related results and a simulator of changes of coastal dynamics due to the effects of climate change.

Among the features of these tools the following are worthy of highlighting: geo-referenced and numerical searches of the main climate and oceanographic variables affecting coastal dynamics, including swell, pressure, wind and sea level for current climate periods (based on observations and analysis) or future climate (based on trends and forecasts), the main impacts on coastal areas due to the effects of climate change, including beach erosion due to the increase in sea levels, transport of sediments, overflow into coastal infrastructures, both for the current and future climate, the exposure of territorial units to the different levels of sea increase, the vulnerability of territorial units based on population, land uses and natural assets, etc.

## Health

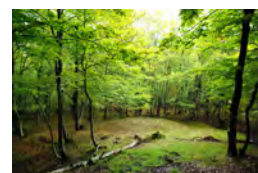
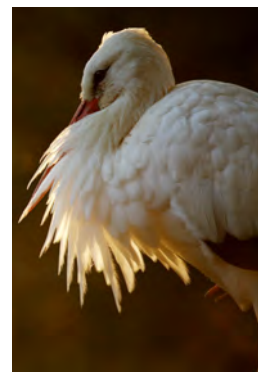
The Health and Climate Change Observatory, coordinated by the Ministry of Health, Social Services and Equality and the Spanish Office of Climate Change (OECC, as per the Spanish acronym) is the instrument used for the analysis, diagnosis, assessment and follow-up of the impacts of climate change on Public Health and the National Health System. Within this framework, a report by sectors has been prepared on the assessment of the impact of climate change on health in Spain, divided into four main areas: air quality, extreme temperatures, transmissible diseases and water quality,

## Forests

A study categorising and systematizing the impacts on, and the vulnerability of, Spanish forests has been developed for the analysis of possible adaptation measures, establishing a series of measures and forestry-related guidelines for proper adaptation management.

## Transport

By means of a joint initiative between the Ministry of Public Work and MAGRAMA, an analysis on the adaptation needs to the climate change in transport infrastructures in Spain has been carried out. The result of this work is the document called "Adaptation Needs to Climate Change of the Main Transport Infrastructures Network in Spain".



The results of these studies and many others comprising the development of the PNACC are available on the MAGRAMA website.

[http://www.magrama.gob.es/es/cambio-climatico/temas/impactos-vulnerabilidad-y-adaptacion/plan-nacional-adaptacion-cambio-climatico/des\\_pnacc.aspx](http://www.magrama.gob.es/es/cambio-climatico/temas/impactos-vulnerabilidad-y-adaptacion/plan-nacional-adaptacion-cambio-climatico/des_pnacc.aspx)



### Policy and social response actions

From the approval in the year 2006 of the National Plan for the Adaptation to Climate Change, the assessment of impacts, vulnerability and adaptation to climate change has been considered a priority objective in Spain. The European context is very present in the development of the PNACC, the work programmes of which have been prepared by trying to achieve the maximum level of complementarity and synergy with the subsequent European adaptation frameworks.

The results achieved in the development of the National Plan for the Adaptation to Climate Change are included in the corresponding Follow-up Reports, all of them published on the MAGRAMA, First Report in 2008<sup>1</sup>, Second Report in 2011<sup>2</sup> and Third Report in 2013<sup>3</sup>. These reports are the documents of the follow-up mechanism established within the PNACC.

The Third Work Programme of the PNACC<sup>4</sup>, adopted in 2014, is in close line with the European Adaptation Strategy with regard to its objectives, structure and time horizons. The scope of this Third Work Programme focuses on the national level and for the horizon 2014-2020, but it also includes actions to be developed together with other administrations to achieve synergies, applicable results and complementarity with other initiatives and frameworks which are developed independently at other administrative, European, regional and local levels.

1 [http://www.magrama.gob.es/es/cambio-climatico/temas/impactos-vulnerabilidad-y-adaptacion/inf\\_prog\\_pnacc\\_tcm712444.pdf](http://www.magrama.gob.es/es/cambio-climatico/temas/impactos-vulnerabilidad-y-adaptacion/inf_prog_pnacc_tcm712444.pdf)

2 [http://www.magrama.gob.es/es/cambio-climatico/temas/impactos-vulnerabilidad-y-adaptacion/2\\_informe\\_seguimiento\\_pnacc\\_tcm7197096.pdf](http://www.magrama.gob.es/es/cambio-climatico/temas/impactos-vulnerabilidad-y-adaptacion/2_informe_seguimiento_pnacc_tcm7197096.pdf)

3 [http://www.magrama.gob.es/es/cambio-climatico/temas/impactos-vulnerabilidad-y-adaptacion/3\\_informe\\_seguimiento\\_pnacc\\_tcm7312797.pdf](http://www.magrama.gob.es/es/cambio-climatico/temas/impactos-vulnerabilidad-y-adaptacion/3_informe_seguimiento_pnacc_tcm7312797.pdf)

4 [http://www.magrama.gob.es/es/cambio-climatico/temas/impactos-vulnerabilidad-y-adaptacion/3PT-PNACC-enero-2014\\_tcm7316456.pdf](http://www.magrama.gob.es/es/cambio-climatico/temas/impactos-vulnerabilidad-y-adaptacion/3PT-PNACC-enero-2014_tcm7316456.pdf)

The priorities established up until now in the previous Work Programmes of the PNACC; focused as they were on the generation of regional climate change scenarios, cost-benefit and impact and adaptation assessments, sectors, systems and scopes relating to water resources, biodiversity, coastal areas, forests, health, tourism and agriculture; are still maintained as priorities for the Third Programme, where they are acknowledged as strategic resources, sensitive and vulnerable areas, territorial importance and social and economic importance. Together with these priorities, the Third Work Programme of the PNACC considers the development of activities within a number of additional sectors and scopes in which there is an increasing demand to promote actions within the field of climate change adaptation. Others worthy of highlighting are scope for island areas, rural or urban environment; regarding the latter, cities face the impact of the effects of climate change in multiple areas, and services and sectors where planning and management at local levels play an important role for minimizing vulnerability to climate change.

Overall, the Third Work Programme of the PNAAC includes more than 120 actions distributed in the following areas, systems, sectors, resources and geographic scopes:

| GENERATION OF REGIONAL CLIMATE CHANGE SCENARIOS              |                                      |
|--|--------------------------------------|
| SECTORS, SYSTEMS AND RESOURCES                               | Biodiversity                         |
|  | Forests                              |
|  | Water                                |
|  | Soils                                |
|  | Agriculture, fishing and aquaculture |
|  | Tourism                              |
|  | Health                               |
|  | Finance / Insurance                  |
|  | Energy                               |
|  | Industry                             |
|  | Transport                            |
|  | Urban Development and Construction   |
|  | Hunting and Inland Fisheries         |
|  | GEOGRAPHICAL TERRITORIES             |
| Marine Environment   |                                      |
| Rural Environment  |                                      |
| Urban Environment  |                                      |
| Mountain Areas   |                                      |
| Coastal Areas  |                                      |
| ASSESSMENT OF COSTS AND BENEFITS OF ADAPTATION               |                                      |
| ADAPTATION TO CLIMATE CHANGE ASSOCIATED TO CLIMATIC EXTREMES |                                      |

The national platform for the exchange of information regarding impacts, vulnerability and adaptation to climate change, **AdapteCCa**<sup>5</sup>, is an initiative organised by the Spanish Office for Climate Change, the Fundación Biodiversidad and those units responsible for the adaptation to climate change of the Autonomous Communities, which together identified the need to create a tool for communication and information exchange among all experts, organizations, institutions and agents involved in this field at all levels. For the design of AdapteCCa we aimed at achieving the maximum complementarity and synergies with the European Adaptation Platform, **Climate-Adapt**<sup>6</sup>.

The European Climate Adaptation Platform, **Climate-Adapt**, offers information by country on different situations relating to adaptation.

<sup>5</sup> [www.adaptecca.es](http://www.adaptecca.es)

<sup>6</sup> <http://climate-adapt.eea.europa.eu/>

They may be consulted in “Case Study Search tool” on:

<http://climate-adapt.eea.europa.eu/sat>

AdapteCCa is operational from June 2013.



The Third Programme of the PNACC intends for the AdapteCCa platform has a key role in the development and governance of such programme. In order to achieve this, we work on all management and development-related aspects of the platform related to contents, structure and features, which include the following elements:

- Reinforcement of the coordination with the European Adaptation Platform, Climate-Adapt.
- Translation into English of basic concepts.
- Customised assistance to different profiles of users and agents, according to interests, nature, levels, etc.
- Continuous updating of the technical contents of the platform.
- Refinement of contents, quality control.
- Introduction of new features.
- Regular assessment and preparation of content summaries and visit flows and information circulating through the platform.
- Dynamization of users based on type.
- Boosting of Work Groups which use the platform for the coordination and development of their projects.
- Spreading and dissemination of the platform.

**Analysis by:** Sub-directorate General for the Coordination of Actions against Climate Change. Spanish Office for Climate Change (OECC). Ministry of Agriculture, Food and Environment.



1.2

ADAPTATION TO CLIMATE CHANGE



# COASTS AND MARINE ENVIRONMENT 1.3

The Spanish coast is over 10,000 kilometres long, and it is one of the country's fundamental natural assets and must be conserved and used appropriately.

Access and public use of the coasts and of the sea, guaranteeing its protection and conservation are two axes of the action in this regard

## Analysis of the Spanish coast and its protection

The assets of the public terrestrial-maritime domain of the Spanish coast stretch to more than 10,000 kilometres and constitute a narrow range in which, in addition to heightened sensitivity and environmental fragility, a great deal of socio-economic interests merge. This obliges us to adopt measures aimed at its conservation and environmental protection in favour of present and future generations and the sustainable development of economic activity.

The variety and singularity of the ecosystems that make up our coast make this a space of great ecological value with considerable biological diversity.

Along the coast we can distinguish between:

- Coastal sea depths
- Cliffs
- Coastal wetlands
- Beaches, sand banks and sand dunes

In addition, in characterising the coast it is necessary to highlight its value in the following areas:

- Environmental value
- Aesthetic value, variety and originality of landscapes
- Economic value, potential and diversity of natural resources
- Educational and recreational value

The current legislative framework is made up of Act 22/1988 on Coasts, amended by Act 2/2013 of 29 May on the Protection and Sustainable Use of the Coasts and the modification of Act 22/1988 on Coasts and by the General Regulation of Coastal Areas approved by Royal Decree 876/2014 of 10 October.

The priority lines of action in relation to Coasts are today directed at:

- The protection and conservation of the integrity of the public terrestrial-maritime domain (DPMT) and of the coastal and marine systems

- Guaranteeing public access and use of the coast for all citizens
- The recovery of the sea shore in urbanized and declining areas

The new legislative framework has as objectives:

- Increase of legal security for stakeholders on the coast
- The promotion of effective coastal protection that is compatible with the impulse of activity and generation of employment.

All of the above without forgetting the regulation of administrative procedures set out for the definition of the public terrestrial-maritime domain and the regime around its use, as well as those relating to property restrictions imposed on lands adjacent to the sea shore in order to guarantee the integrity and public use of the public terrestrial-maritime domain and for the development of the transitional regime.

### Principal aspects to be considered

On the narrow coastal stretch and in the marine environment a great range of interests and activities merge: the tourism sector, fisheries and aquaculture, maritime transport, certain types of energy activities, sporting activities and entertainment linked to the sea.

Moreover, there is a concentration of a large proportion of the population on the coast, a trend that is also increasing, and that absorbs a great number of visitors in the summer holiday season.

In particular, the incidence of this activity on the Spanish tourism sector, which constitutes 10.9% of Spanish GDP, is fundamental. On the strip of public terrestrial-maritime domain alone there are almost 3,000 restaurant establishments and 100 hotels, a number that multiplies in the adjacent area of protection easement, in addition to many other activities and facilities.

A reflection of this incidence is the more than 2,500 authorizations for the occupation of the public terrestrial-maritime domain awarded during 2014 for the development of economic activity directed at tourism, both domestic and international, highlighting in particular those directed towards the establishment of beach facilities and activities during the summer holiday season.

Current regulations relating to the public terrestrial-maritime domain pursues the effective protection of the environment, while remaining compatible with the adequate development of activities there.



**The incidence of regulations regarding the public land-sea domain of a country that offers sun and sea tourism such as ours, is fundamental to understand the much-needed compatibility of coastal protection and economic activity, such as that of the tourism sector**



### Marine Habitats



### Policy and social response actions

During 2014, Royal Decree 876/2014 of 10 October entered into force, approving the General Regulation of Coastal Areas, developed both by the Act of 1988 and its reform through Act 2/2013 of 29 May. The new regulation is intended as an efficient instrument in achieving the principles that modified the coastal legislation, namely, coastal protection and legal certainty.

The new regulation relating to the coast has three main objectives:

- The environmental protection of the coast. To guarantee effective environmental protection of the coast, among other things, the prohibition of construction along the coast must be extended, natural beaches must be better protected and, for the first time, measures are being brought forward for the protection of the coast against climate change.
- The security of rights-holders along the coast, better defining protected coastal spaces and guaranteeing information for citizens.
- The development of sustainable economic activities.

In terms of action in the area of coastal protection, 2014 saw the preparation of this first documentation of the **Spanish Strategy for Adaptation to Climate Change on the Coast**. This is the first time a document of this nature has been prepared. It will be approved over the course of 2015. Thus the line of work established in the 2006 PNACC will be continued.

In addition, specific territorial strategies have been developed: for the Huelva coast and the coast of the county of Maresme (Barcelona). In 2015, similar documents will be approved for the South Castellón and South Valencia coastlines.

With regard to the protection of the marine environment:

- In recent years, significant progress has been made with the appearance of new regulations that guarantee proper marine use planning in order to ensure good environmental status: Act 41/2010 of 29 December on Protection of the Marine Environment. The Act regulates, among other issues, the marine strategies of the Spanish Network of Marine Protected Areas (RAMPE), which are already being implemented. The first 4 phases of marine strategy have already been completed (initial assessment of the marine environment, definition of good environmental status, establishing of environmental objectives and the design of monitoring programmes), and the fifth and final phase is currently being prepared (establishing of programmes of measures) which should be completed in 2016. The quality of work carried out over these years has been recognised by the European Commission, which, after detailed analysis of the application of the first phases of the marine strategies developed by Member States, gave Spain a very positive overall rating: we are the highest rated country in the Mediterranean and the second highest rated in the Atlantic and in all of Europe.



- Marine Protected Spaces: in 2014, 39 Special Protection Areas for Birds were declared through Order AAA/1260/2014, of 9 July, through which Special Protection Areas for Birds in Spanish Waters are declared (BOE [Spanish Official State Gazette] No. 173, of 17 July 2014). A total of 9 Sites of Community Importance have also been declared through Order AAA/1299/2014, of 9 July, approving the proposal for inclusion on the Natura 2000 Network list of Sites of Community Importance the marine spaces of the western system of underwater canyons of the Gulf of Lion, the Minorca Channel and the mud volcanoes of the Gulf of Cádiz and the Galicia Bank (BOE No. 176 of 21 July 2014) and Order AAA/2280/2014, of 1 December, approving the proposal for inclusion on the Natura 2000 list of Sites of Community Importance the marine spaces of the systems of underwater canyons of Avilés, South Almería-Seco de los Olivos, the Alborán Marine Space, the Marine Space of the Columbretes Islands and ESZZ15001 and the Conception Bank (BOE No. 293 of 4 December). In early 2015 the tenth Site of Community Importance list was completed in the LIFE + INDEMARES project through order AAA/368/2015, of 24 February, approving the proposal for inclusion on the Natura 2000 list of sites of Community Importance the marine space to the east and south of Lanzarote-Fuerteventura (BOE No. 54 of 4 March 2015).

For its part, various marine spaces are already integrated into the Spanish Network of Marine Protected Areas, RAMPE (a marine protected area, marine reserves of fishing interest at state level and special areas of marine conservation of the Macaronesian region) and its expected that it will continue to incorporate other spaces in the near future. Finally, we must point to the advances made over recent years in extending marine protected areas in Spain, growing from less than 1% in 2011 to more than 8% in early 2015 and the numbers continue to grow towards the international commitment to protecting 10% of the marine surface by 2020.

- The protection of the marine environment and of the coast against episodes of accidental pollution by oil and other noxious and potentially hazardous substances has also evolved considerably in recent years. The approval of the National Response System against pollution of the sea in 2012, which involved three Ministries (Public Works and Transport, the Interior and MAGRAMA) and in particular the publication in May 2014 of the State Plan for the Protection of the Sea Shore against Pollution (Ribera Plan) by MAGRAMA offers a new framework of action against the large-scale pollution episodes that our sea and coast has suffered historically. The Ribera Plan includes aspects such as the a sensitivity atlas of the Spanish coast and a vulnerability and risk analysis, and complements the Territorial Plans established by Autonomous Communities.

**Analysis by:** Directorate General for Coastal and Marine Sustainability -MAGRAMA. Ministry of Agriculture, Food and Environment.

### Marine Protected Areas



**For more information on our coasts and their protection:**

[www.magrama.gob.es](http://www.magrama.gob.es)

[www.magrama.gob.es/es/costas/temas](http://www.magrama.gob.es/es/costas/temas)

1.3

COASTS AND MARINE ENVIRONMENT



# NATURE 1.4

The percentage of protected areas is the highest of the OECD, amounting to 32% of the territory and 7% of territorial water in Spain

Only 3.95 % of the total territory is covered by artificial areas, way below the European average of 4.6%

**The Sectoral Plan of Nature Tourism and Biodiversity** takes as its starting point the natural wealth of our country and aims to provide impetus for nature tourism as a way of generating income and social and economic development in places with unique value

Spain is one of the of the countries with the greatest biological diversity in the European Union. Of the 197 types of habitats of Community interest included in Annex I of Directive 92/43/EEC of the Council of 21 May 1992, on the conservation of natural habitats and wild fauna, some 120 types of habitats (approximately 60%) can be found in Spain. The great diversity of ecosystems present in Spain means that there is a high diversity of plant and animal species, amounting to around 91,000 terrestrial species and almost 2,300 marine taxons. At least 54% of the total number of species known in Europe can be found in Spain, with a remarkable percentage corresponding to endemic species, which makes Spain responsible for the preservation of the greatest specific wealth in western Europe.

There are many direct and indirect threats which, to a greater or lesser extent, negatively affect biodiversity, including, among others, the loss and degradation of habitats, the over exploitation of resources, the loss of genetic variability, environmental pollution, the introduction of invasive alien species and the effects of climate change and desertification.

To achieve the goals of conservation, sustainable use and the restoration of biodiversity, what is required is the proper integration and consideration of the biological diversity within sectoral policies. This is the only way to deal with the underlying causes of loss. Efforts are being made in order to make progress for the understanding of the connections of the biological diversity and the economic and social development and its relation with human well-being so that it may properly reflect its value in major political decisions.

The Council of Ministers of the Environment of the European Union has acknowledged on several occasions that one of the main reasons for not achieving the goals of the EU regarding biodiversity was the incomplete and poor integration of sectoral policies. In this sense, the Council has highlighted the need to strengthen efforts to integrate biodiversity with the development and application of other policies, taking into account the objectives of all policies affected. In particular, the Council referred to national and EU policies relating to the management of natural resources such as agriculture, forestry, food safety, fisheries and energy, as well as the one related to the planning of the territory, transport, tourism, commerce and development.

Act 42/2007 of 13 December, on Natural Heritage and Biodiversity is considered one of the most ambitious acts of the OECD and it has allowed to develop different regulations that improve, the knowledge, the management of the territory and the network protected areas, promote better sectoral integration, prevent the net loss of biodiversity and ensure the conservation of natural heritage.

After significant progress in legislation, with more than 5 royal decrees based on Act 42/2007 of 13 December, it is important that Spain strengthens the economic analysis so as to establish objectives for biodiversity policies and promote alternative financing sources, beyond public funding. Greater efforts are also required to integrate biodiversity with sectoral policies, as well as better coordination between the different levels of administration.

**Analysis by:** Sub-directorate General for the Natural Environment. Directorate-General for Environmental Quality and Assessment and Natural Environment. Ministry of Agriculture, Food and Environment.



**Priority Action Framework for the Natura 2000 Network. For the funding period 2014-2020**

1.4

NATURE

**Recommended websites:**

Royal Decree 416/2014, of 6 June, approving the Sectoral Plan of Nature Tourism and Biodiversity.  
[http://www.boe.es/diario\\_boe/txt.php?id=BOE-A-2010-6432](http://www.boe.es/diario_boe/txt.php?id=BOE-A-2010-6432)

OECD Report for the Assessment of the Environmental Performance of Spain 2015:  
<http://www.oecd.org/environment/oecd-environmental-performance-reviews-spain-2015-9789264226883-en.htm>

Priority Action Framework for the Natura 2000 Network:  
[http://www.magrama.gob.es/biodiversidad/temas/espacios-protegidos/red-natura-2000/rn\\_cons\\_marco\\_accion\\_prioritaria.aspx](http://www.magrama.gob.es/biodiversidad/temas/espacios-protegidos/red-natura-2000/rn_cons_marco_accion_prioritaria.aspx)



# Part 2.

## INDICATORS: AREAS AND SECTORS

**2.1 Economy and society**

**2.2 Air quality**

**2.3 Emissions to the  
atmosphere and  
climate change**

**2.4 Water**

**2.5 Land**

**2.6 Nature**

**2.7 Coasts and marine  
environment**

**2.8 Green economy**

**2.9 Environmental research,  
development and  
innovation**

**2.10 Waste**

**2.11 Agriculture**

**2.12 Energy**

**2.13 Industry**

**2.14 Fisheries**

**2.15 Tourism**

**2.16 Transport**

**2.17 Urban environment and  
households**

**2.18 Natural and  
Technological Disasters**





# ECONOMY AND SOCIETY

## 2.1

As a consequence of the global economic and financial crisis, investment has fallen significantly in the EU and in many countries. This reduction is estimated at an average of approximately 15% in comparison to peak levels reached in 2007. However, in some Member States the drop has been much sharper: Spain is one of the countries which have suffered the crisis most acutely (in the region of 38%).

The Investment Plan for Europe (COM(2014) 903 of late November 2014), states that Member States and regional authorities must promote “... *the necessary structural reforms, exercise budgetary responsibility, guarantee regulatory certainty and stimulate investment to boost employment and growth*”. It considers that Member States must invest according to their budgetary margin while prioritising investment and expenditure related to growth, thus making better use of the EU funds and creating a more favourable environment to promote private investment.

The Spanish National Reform Programme (2014) is a key instrument in economic policy, aimed at consolidating the change in the economic cycle which seems to be underway to ensure solid and sustainable growth that favours the creation of employment. The macroeconomic scenario for the period 2014-2017 studied in the Stability Programme and in the National Reform Programme foresees that the recovery started in the second half of 2013 will extend in time and it also anticipated an uninterrupted growth phase with increasing intensity.

The two main lines of action of the Programme are mutually reinforcing and they can be summarized as follows: going further in the reforms and strengthen economic recovery and employment creation. They are divided into the five priority areas identified in the Annual Growth Survey 2014 (COM (2013) 800 final): differentiated fiscal consolidation which boosts growth; the restoration of normal borrowing conditions to the economy; fostering present and future growth and competitiveness; the fight against unemployment and social consequences of the crisis; and the modernisation of Public Administration. Besides, these measures serve as basis for compliance with the objectives of the Europe 2020 Strategy.

### Population

- In 2014 the Spanish population decreased for the second consecutive year coming up to 46.77 million inhabitants.
- The Autonomous Communities of Andalucía, Catalonia, Madrid and Valencia were, in 2014, the ones with the highest population: the four of them represented more than 58.5% of total population
- In 2013, Spain ranked fifth in the EU-28 in number of inhabitants, with 9.2% of the total population
- Between 2008 and 2013, the Spanish emigration rate doubled, from 0.07 to 0.15 emigrations per inhabitant

### Economic evolution

- In terms of the volume of economic activity, measured by means of the GDP, this increased 1.4% in 2014
- In 2013, Spain was the fifth country in terms of GDP contribution of the EU-28 (8.6% of the total)
- Since 2010, GDP per inhabitant in Spain (in purchasing power parity and at current prices) has been lower than the EU-28 average. In 2013, it reached almost €25,000/inhab
- The unemployment rate of the population between 16 and 64 years was 24.6% in 2014, lower than 26.2% in 2013. In 2007 it was 8.2%.
- The National Reform Programme (April 2013) and the Spanish Stability Programme 2013-2016, are the main instruments for the development of Spanish economic policy

### Requests for environmental information

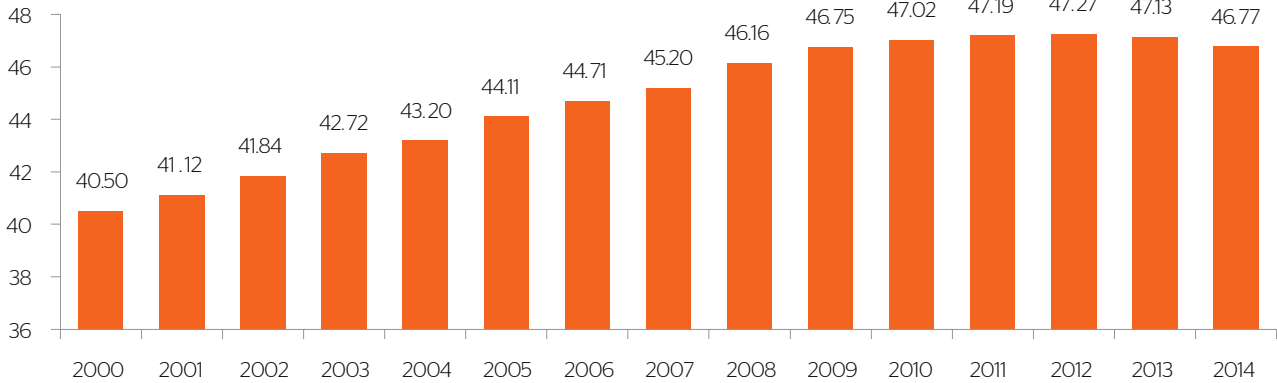
- The Act on transparency, access to public information and good governance came into force in 2013
- During the year 2013, a total of 294,858 requests for environmental information were dealt with, 15.7% fewer than in 2012



## Population

### Official population figures

Review of the Municipal Register of Inhabitants as of 1 January (millions of inhabitants)



Source: INE

In 2014 the Spanish population decreased for the second consecutive year, at 46.77 million inhabitants

According to the forecasts of the Municipal Register, in 2014 the Spanish population reached 46,771,341 inhabitants, representing a decrease of 0.76% in relation to the population of 2013. It is the second consecutive reduction since in 2013 population decreased by 0.29%.

Between the years 2000 and 2014, the Spanish population has increased by a total 15.5% with different annual variations, always following an upward trend. However, population increases have been smaller in recent years, reaching the aforementioned reductions from 2012 (-1.05% between 2012-2014).

In 2014, the foreign population represented 10.1% of the total population. This year, there was a reduction by 9.4%, more sharp than the one in 2013.

Considering current demographic trends, Spain may lose a million inhabitants over the next 15 years and 5.6 million over the next 50 years. The percentage of the population over 65, which amounts to 18.2% at present, would be 24.9% in 2029 and 38.7% in 2064 (INE, Population Forecast in Spain 2014-2064, in Press Release of 28-10-2014).

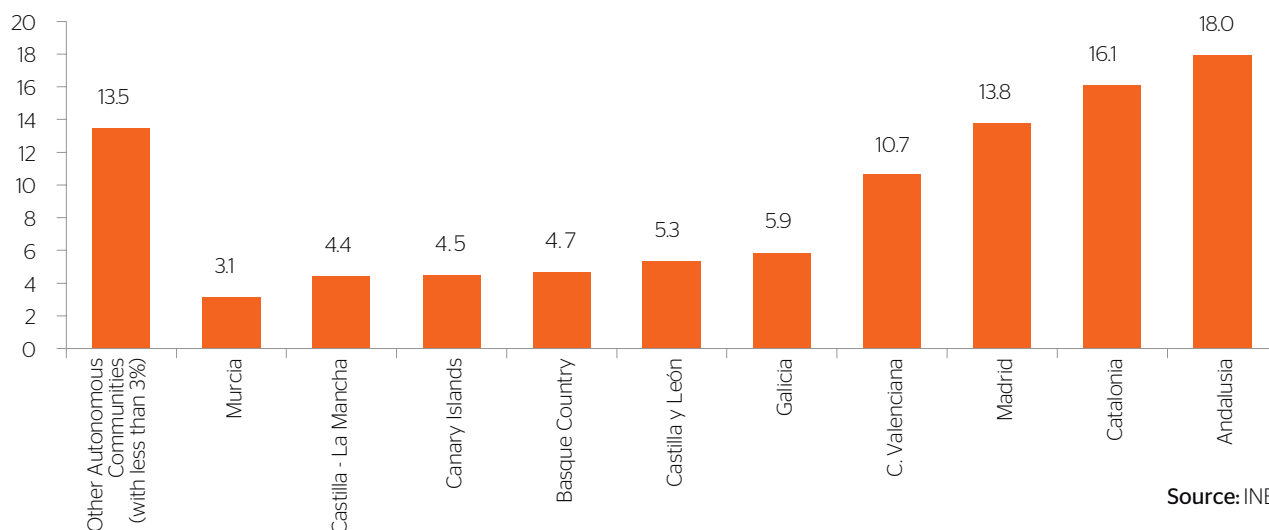
Regarding migratory flows, a total of 280,772 people migrated to Spain in 2013, which means a decrease by 53.1% in relation to 2008. On the other hand, those Spaniards who migrated abroad in 2013 amounted to 532,303, 84.6% more than during 2008. In both cases, the Spanish economic situation, which negatively affected employment, explains this trend. The Short-Term Migration Indicator regarding the Spanish population moving abroad, doubled between 2008 and 2013, from 0.07 to 0.15 emigrations per inhabitant. Catalonia, Madrid and Valencia were the Autonomous Communities with the highest proportion of people emigrating abroad (26.1%, 23.6% and 13.4%, respectively).

The distribution of the population by Autonomous Community keeps the same patterns as previous years, so Andalucía, Catalonia, Madrid and Valencia are those with the highest population in 2014. As a whole, the population of these four autonomous communities represented 58.5% of the total Spanish population (in the year 2000, they represented 56.6%).

Between 2008 and 2013, the Spanish emigration rate doubled, from 0.07 to 0.15 emigrations per inhabitant

The Autonomous Communities of Andalucía, Catalonia, Madrid and Valencia were, in 2014, the ones with the highest population: the four of them represented more than 58.5% of total population



**Distribution of Spanish Population, 2014 (%)**


The above mentioned average increase of total population by 15.5% for the period 2000-2014 has been exceeded by ten autonomous communities. The Balearic Islands, Murcia and Melilla have experienced increases over 27%. On the other hand, Asturias's population decreased by 1.4% whereas the population in Galicia and Castilla y León slightly increased by 0.6% during such same period.

In 2000, the Spanish population represented 8.2% of the total population of EU-28. In 2013, such percentage came up to 9.2%, raking fifth among the highest populated countries, surpassed only by Germany (16.2%), France (12.9%), the UK (12.6%) and Italy (11.8%). Spain is also one of the countries with the highest population growth (16.7% between 2000 and 2013), only surpassed by Cyprus (25.4%), Luxembourg (23.9%) and Ireland (21.5%).

In 2013, Spain ranked fifth in the EU-28 regarding the number of inhabitants with 9.2% of the total population

**Definition of the Indicator:**

The indicator presents the official population figures in Spain from the review of the Municipal Register as of the 1 of January of each year. They are approved by means of Royal Decree and are published in the Spanish Official State Gazette. The figures corresponding to 2014 were approved by means of Royal Decree 1007/2014, of 5 December, which declares official the population figures resulting from the review of the Municipal Register of Inhabitants of 1 January 2014.

**Source:**

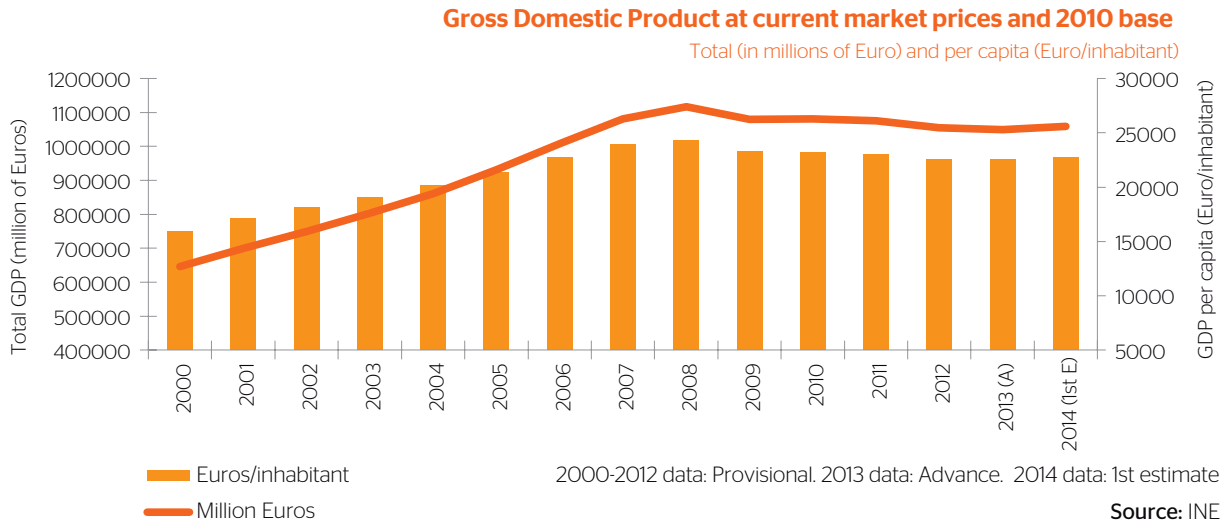
[Spanish National Institute of Statistics \(INE\). Figures resulting from the review of the Municipal Register as of 1 January of each year \(several years\). Information on the website:](#)

**Recommended Websites:**

- [http://www.ine.es/inebmenu/mnu\\_padron.htm](http://www.ine.es/inebmenu/mnu_padron.htm)
- <http://www.boe.es/boe/dias/2014/12/22/pdfs/BOE-A-2014-13303.pdf>



## Economic evolution



The National Reform Programme (April 2013) and the Spanish Stability Programme 2013-2016, are the main instruments for the development of the Spanish policy

In terms of the volume of economic activity, measured by means of the GDP, it increased by 1.4% in 2014

The first estimate for 2014 Gross Domestic Product (GDP) at current prices, shows a slight increase of 0.9% in relation to 2013. Therefore, the negative trend in growth experienced since 2009 is broken.

In 2014, three autonomous communities (Catalonia, Madrid and Andalusia) generated more than half of the total GDP (50.9%).

From 2008, in which GDP at current prices reached the maximum value in recent years (1,116.207 billion Euros), until the 2014 (with a estimated value of 1,058.469 billion Euros), there has been a decrease of 5.2%.

Regarding the period 2008-2013, the reduction in GDP reached 6.0%. This decrease has been caused, to a major extent, by the construction and industry sectors, the Gross Value Added (GVA) of which dropped by 51.3% and 8.3% respectively.

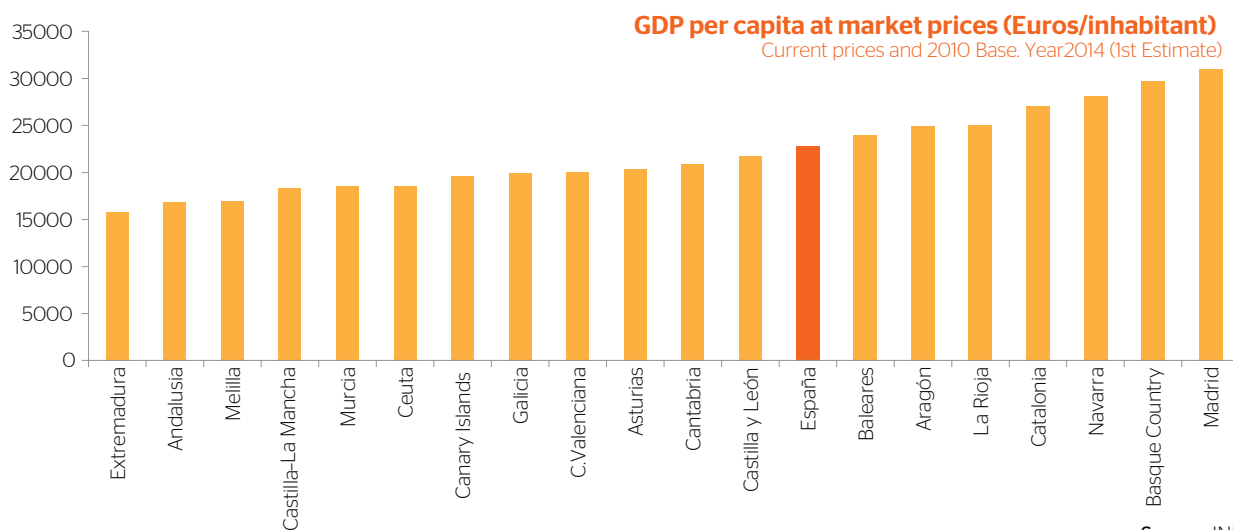
Data from 2013 show the major importance of the services sector in the GVA structure (67.5%), followed by the industry sector (16.1%) and the construction sector (5.2%) which, even after the drop experienced after the financial crisis, caused mainly by the effects of the real estate bubble, is still contributing to a greater extent than agriculture (the share of which amounts to just 2.5% of GVA).

In terms of volume, economic activity showed an increment of 1.4% in 2014, in contrast to decreases of 1.2% in 2013 and 2.1% in 2012. Aspects such as the improvement of financial conditions at Community level, the trust of foreign investors and the correction of external imbalances due to the evolution of the exports of goods are some of the causes of such economic improvement; household consumption and tourism have also contributed to this improvement. Between 2010 and 2014 the average annual growth in terms of volume reached -0.6%.

La Rioja (2.5%), Extremadura and the Canary Islands (2.2% in both cases) are the Autonomous Communities with the highest GDP growth in terms of volume. Six other regions showed real growth rates in terms of GDP above the national average (1.4%). Besides, a total of 10 Autonomous Communities were above the figure estimated for all the countries in the EU-28, which was 1.3%.

Per inhabitant, in 2014, seven of the nineteen Autonomous Communities showed GDP values above the Spanish average of € 22,780/inhab. This year, all autonomous communities experienced positive growth in terms of GDP per inhabitant, whereas in 2013 only eight grew and in 2012 all experienced decreases.

For the year 2014, the average employment growth was 1.2%, in contrast with the drop by 2.8% in 2013.



It is the first positive figure in six years. Regarding the annual average, employment grew in the industry (1%) and services sectors (1.7%) and the downward trend was less sharp in the construction sector (-3.5%), after the decrease of 2013 (-11.4%); the number of people employed in the agriculture sector remained relatively stable (-0.1%). However, the unemployment rate for the population between the ages of 16 and 64 was still high, 24.6%, although lower than that of 26.2% for 2013. Andalucía, the Canary Islands and Ceuta were the Autonomous Communities with the highest unemployment rate, over 30%.

In 2013, Spain contributed with 8.6% of the total GDP of EU-28 (measured in purchasing power parity -PPP- and at current prices), a very similar value to the average for the last fourteen years (8.8%). Only four countries (Germany, France, the United Kingdom and Italy) made a higher contribution.

Between 2000 and 2013, EU GDP (also measured in purchasing power parity and at current prices) increased by 41.6% whereas the Spanish GDP increased to a greater extent up to 52.3%. However, per inhabitant, during that same period GDP growth in Spain was lower than that of the EU-28, 31.6%, whereas the European rate was 35.7% (both expressed in PPP). From 2002 and until 2007, Spanish GDP per inhabitant was higher than the average of the EU-28; 2007 was the year in which the highest value was registered: €26,600/inhab.

The unemployment rate of the population between 16 and 64 years was 24.6% in 2014, lower than the 26.2% in 2013. In 2007 it was 8.2%

In 2013, Spain was the fifth country in terms of GDP contribution of the EU-28 (8.6% of the total)

Since 2010, GDP per inhabitant in Spain (in purchasing power parity and at current prices) has been lower than the EU-28 average. In 2013, it reached almost €25,000/inhab.

### Definition of the Indicator:

The indicator shows the Gross Domestic Product (GDP) at market prices and at current prices, both in absolute figures and per inhabitant. Information on its annual evolution in terms of volume is also provided.

### Methodological Notes:

- For the first time, estimates are generated according to the new 2010 Spanish Regional Accounting (CRE, as per the Spanish Acronym) basis, prepared by the INE based on the EU's new compulsory methodological standard: the European System of National and Regional Accounts (SEC) approved by virtue of the Regulation (EU) no. 549/2013 of the European Parliament and of the Council, of 21 May.
- Data corresponding to 2013 are included as an advance whereas those corresponding to 2014 are a preliminary estimation. The ones corresponding to previous years are considered provisional by the INE.
- As of the closing date, data of the Gross Value Added (GVA) just covered up to 2013, since data for 2014 are not published.
- The estimate for GDP per inhabitant is calculated based on the "Population figures as of 1 July", carried out by the INE from the "Current Population Estimates in Spain".

### Source:

Spanish National Institute of Statistics (INE). Gross domestic product at market prices. Current prices. At INEbase: Economy. Fiscal accounts Spanish Regional Accounting. Base 2010. Functional approach. GDP and its components. Last data published: Series 2010-2014 (27 March 2015). Main results

### Recommended Websites:

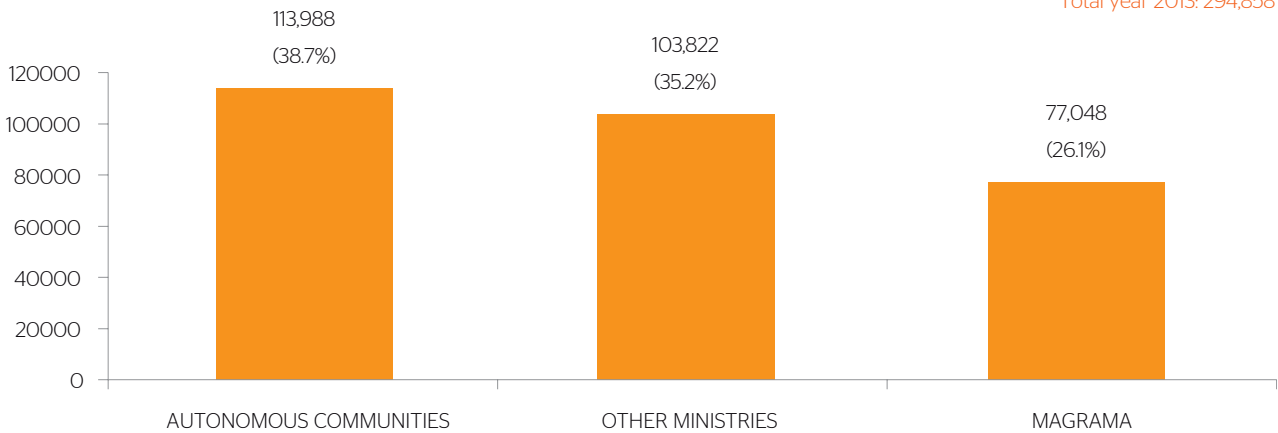
- [http://www.ine.es/inebmenu/mnu\\_cuentas.htm](http://www.ine.es/inebmenu/mnu_cuentas.htm)
- <http://www.ine.es/prensa/np901.pdf>
- <http://ec.europa.eu/eurostat/data/database>



## Requests for environmental information

### Number of requests for environmental information

Total year 2013: 294,858



Source: MAGRAMA

During the year 2013, a total of 294,858 requests for environmental information were dealt with, 15.7% less than during 2012

The Act on transparency, access to public information and good governance came into force in 2013

During the year 2013 294,858 environmental information requests were submitted (not included data from the Autonomous Community of the Canary Islands and the Autonomous City of Ceuta). In 2012, the total number of requests submitted amounted to 349,828, so in 2013 information requests registered decreased by 15.7%.

61.34% of the requests (180,870) were submitted to the General State Administration and the other 38.66% (113,988 requests) were submitted to the Autonomous Administrations. Environmental information services of the Ministry of Agriculture, Food and the Environment received 26.13% of the total.

More specifically, the main information requests (environmental or general) received and/or processed during 2013 exclusively by the Environmental Information Office of the MAGRAMA (Plaza de San Juan de la Cruz, s/n), were distributed as follows: water (10.8%), coasts (9.5%), radiation and waste (7.9%), landscape and natural areas (4.6%), measures, regulations and plans (4.3%), hazardous substances (3.6%) and biological diversity (3.5%). Regarding the processing method, 71.6% requests were dealt with over the phone, 23.4% through email and 4.3% at the offices person. The other 0.7% was responded by standard mail, website and fax. The concept of transparent and open public Administration allows citizens to access the environmental information of the public administration. It is based on the Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters and related regulations.

The preliminary data for 2014 reveals that environmental information requests submitted this year to the different Units of the MAGRAMA was approximately 67,000 requests (not including data from the Cantabrian and Guadalquivir river basin authorities). Regarding processing method, and in line with previous years, in 2014 the telephone was the most common system (56.5%), followed by email (27.3%) and requests in person (5.9%).

By topic, the highest number of requests received by the MAGRAMA were those related to the atmosphere (46.6%), followed by those related to water (19.6%) and, in third place, those related to landscape and natural areas (8.6%).

**Definition of the Indicator:**

The indicator shows the number of requests for environmental information submitted to the environmental information services of the General State Administration and of the autonomous communities.

**Methodological Notes:**

- Data obtained through the different bodies and entities of the General State Administration and the administrations of the Autonomous Communities with environmental competencies collected in a specific manner.
- Royal Decree 401/2012, of 17 February, developing the basic organic structure of the Ministry of Agriculture, Food and the Environment, assigns to the Technical Secretariat, among other functions, the exercise of the management of the information to citizens within the scope of competencies of the Department, as well as the follow up and coordination of those actions arising from Act 27/2006, regulating access rights to information, public participation and access to justice regarding the environment.
- In the total estimate data corresponding to the Autonomous Community of the Canary Islands and the Autonomous City of Ceuta are not included.
- Act 27/2006, of 18 July, regulating access rights to information, public participation and access to justice regarding the environment, includes Directives 2003/4/EC and 2003/35/EC. These Directives involve the adaptation to the Aarhus Convention of the Community regulations regarding this matter.

**Source:**

[Ministry of Agriculture, Food and the Environment. Statistical reports on the application of the Act regarding access to environmental information, the preparation of which is compulsory according to the provisions of additional provisions no. eight of Act 27/2006. These reports are published in the Annual Report of the Department and can be consulted on the website: \[Services/Information Services/Environmental information \\(Aarhus\\)/Statistical reports.\]\(#\)](#)

**Recommended websites:**

<http://www.magrama.gob.es/es/ministerio/servicios/informacion/informacion-ambiental/>





## AIR QUALITY 2.2

According to the World Health Organization (WHO), urban air pollution increases the risk of suffering acute respiratory infections such as pneumonia, as well as chronic diseases, such as lung cancer and cardiovascular diseases. The most serious effects are caused to those that already suffer from some condition and particularly vulnerable groups such as children and the elderly.

In Note 313 of March 2014 on “Air Quality and Health” and in the assessment of 2013 carried out by the International Agency for Research on Cancer, the WHO highlights the importance and seriousness of outside air pollution due to its consequences. Besides, it states that, according to 2012 estimates, air pollution in cities and rural areas around the globe, causes 3.7 million early deaths each year due to exposure to small particles that may cause heart diseases, respiratory diseases and cancer.

In Spain, the “National Plan for Air Quality and Atmosphere Protection 2013-2016: AIR Plan” approved in 2013 is the instrument established for the improvement of air quality and guaranteeing the protection of health and ecosystems. In order to do so, four main goals are established: compliance with regulations on air quality and emission limits, promotion of action plans in such matter, the reduction of emissions into the atmosphere, particularly in those areas affected, and raising awareness and improving the information available on air quality.

For the development of this Plan, there is a specific regulatory framework including Directive 2008/50/EC of 21 May 2008 on ambient air quality and cleaner air for Europe and Royal Decree 102/2011, of 28 January, on the improvement of air quality, which update and repeal previous regulatory instruments.

### Average annual NO<sub>2</sub> concentrations in urban areas

- The average annual NO<sub>2</sub> concentration decreases generally in all populations with more than 50,000 inhabitants
- In 2013, the hourly limit value (HLV) was not met in one area and the annual limit value (ALV) was not met in five areas
- The highest levels were measured in cities with large populations (> 500,000 inhabitants)

### Average annual PM2.5 concentration in urban areas

- Out of the six years under assessment, only 2009, 2010 and 2013 showed decreases in average annual PM2.5 concentrations
- As in the case with PM10, the highest average PM2.5 concentration was the one measured in cities with the largest populations, in which traffic is heavier

### Regional background air quality: average concentrations of SO<sub>2</sub>, NO<sub>2</sub>, PM2.5, PM10 and O<sub>3</sub>

- There is an improvement of regional background air quality in Spain, shown by the reduction of the levels of SO<sub>2</sub>, PM2.5 and PM10 and NO<sub>2</sub>
- Regarding O<sub>3</sub>, levels remain more stable with a less significant decrease (only 5% between 2003 and 2013)

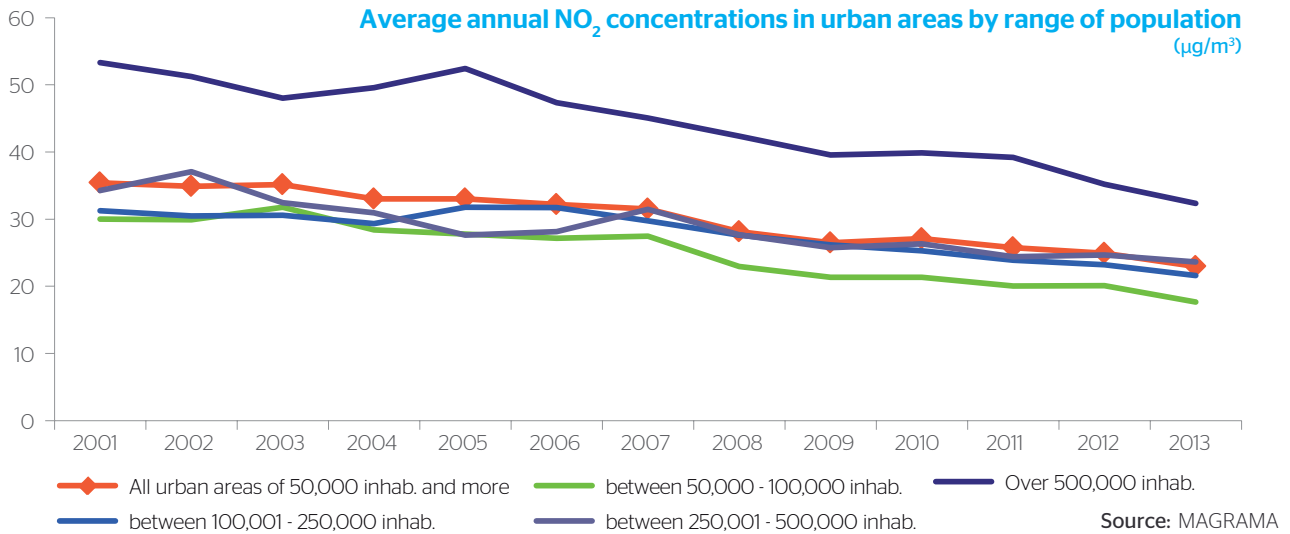
### Average annual PM10 concentration in urban areas

- There is a decrease in average PM10 concentrations, although in those populations with over 500,000 inhabitants there were exceptional increases in 2006, 2011 and 2012
- The highest average PM10 concentration was that measured in cities with the largest populations, in which traffic is heavier

### Average annual O<sub>3</sub> concentrations in urban areas

- Due to the high solar irradiance and the emissions of its precursors, O<sub>3</sub> concentrations have increased in recent years
- O<sub>3</sub> concentrations are higher in suburban and rural areas than in urban areas (with heavier traffic)
- In cities, there has been a rise in O<sub>3</sub> levels relation to the reduction of NO<sub>x</sub> (since NO does not react with O<sub>3</sub> thus reducing it locally)

## Average annual NO<sub>2</sub> concentrations in urban areas



The average annual NO<sub>2</sub> concentration decreases generally in all populations with more than 50,000 inhabitants

In 2013, the hourly limit value (HLV) was not met in one area and the annual limit value (ALV) was not met in five areas

The highest levels were measured in cities with large populations (> 500,000 inhabitants)

Nitrogen oxides are mainly originated in combustion processes associated to traffic (especially motor vehicles and, more particularly, diesel engines) and transportation in general, as well as in industrial facilities and power generation facilities; it is estimated that more than 75% of NO<sub>x</sub> in ambient air is generated by road traffic. For that reason, the highest levels of NO<sub>x</sub> may be reached in major urban areas, in their metropolitan areas and in the surrounding areas of communication routes with heavier traffic.

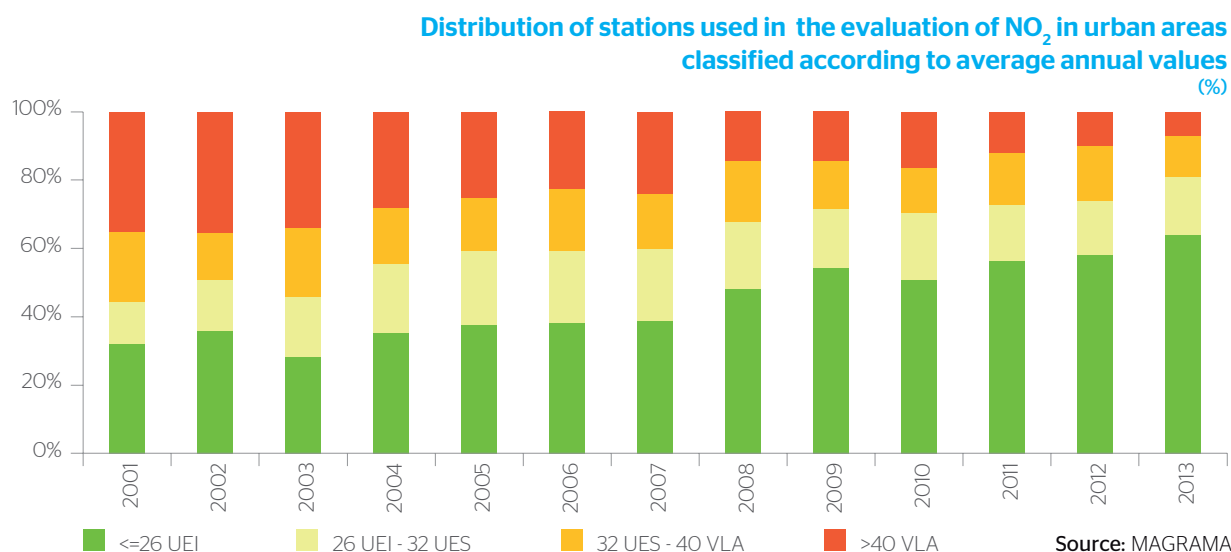
In the period 2001-2013, the average concentration of NO<sub>2</sub> in those cities with more than 50,000 inhabitants has been reduced by 35.2% from 35.4 µg/m<sup>3</sup> to 22.9 µg/m<sup>3</sup>. This decrease has been above average in populations with more than 500,000 inhabitants, amounting to 39.3% during the same period. On the other hand, as expected, populations between 50,000 and 100,000 inhabitants are the ones experiencing the sharpest decrease (41.1%) and are also the ones with the lowest average NO<sub>2</sub>.

For the year 2013, the report "Assessment of Air Quality in Spain 2013" establishes that records show that levels have been exceeding exceptionally in some of the major urban areas. In particular, the hourly limit value (HLV) was not met in one area and the annual limit value (ALV) was not met in six areas, although for one of them there is an extension and the ALV plus the tolerance margin is met.

The analysis of the distribution of average annual NO<sub>2</sub> in measurement stations located in urban areas (municipalities with a population over 50,000 inhabitants), reveals that there is an increase in the percentage of stations under the Lower Assessment Threshold (LAT) and a decrease of the ones located above the Annual Limit (ALV). There is also an increase in those between the upper and lower thresholds.

These results are similar to those obtained when taking into account only those stations which were included in every year of the historical series so as to avoid bias due to the restructuring of the networks (introduction and removal of stations over the years).





According to the European Environment Agency (indicator “Exceeding of limit values of air quality in urban areas (CSI 004) - Evaluation published in November 2014”), 8% of urban population was exposed in 2012 to PM10 concentrations over those values regulated by the EU. This percentage amounted to 27.2% in 2003, year in which the highest percentage of inhabitants exposed to values over the limits was estimated.

#### Definition of the Indicator:

The indicator shows the average annual NO<sub>2</sub> concentration in urban areas, which are municipalities with more than 50,000 inhabitants. The information is offered with disaggregated data for four ranges according to population sizes of the municipalities (50,000-100,000 inhabitants, 100,001-250,000 inhabitants, 250,001-500,000 inhabitants and more than 500,000 inhabitants) as well as for all municipalities with populations over 50,000 inhabitants.

#### Methodological Notes:

- The indicator refers only to NO<sub>2</sub>, due to the fact that, even though nitrogen oxides include both nitrogen monoxide (NO) and nitrogen dioxide (NO<sub>2</sub>), the latter is the main chemical form with negative effects on health; it also refers to the parameter regulated for health protection under Community (Directive 2008/50/EC) and national (RD 102/2011) regulations. On the other hand, NO oxidises easily, generating NO<sub>2</sub>.
- The historical series for the distribution of the average annual NO<sub>2</sub> levels in evaluation stations in municipalities with more than 50,000 inhabitants shows the percentage of stations the annual average of which is classified in each value range, based on regulation levels (limit value and upper and lower evaluation thresholds).
- The references on the regulated values may be checked in the “Air Quality in Spain Report 2013”, prepared by the Directorate General for Environmental Quality and Assessment and Natural Environment of the MAGRAMA.

#### Source:

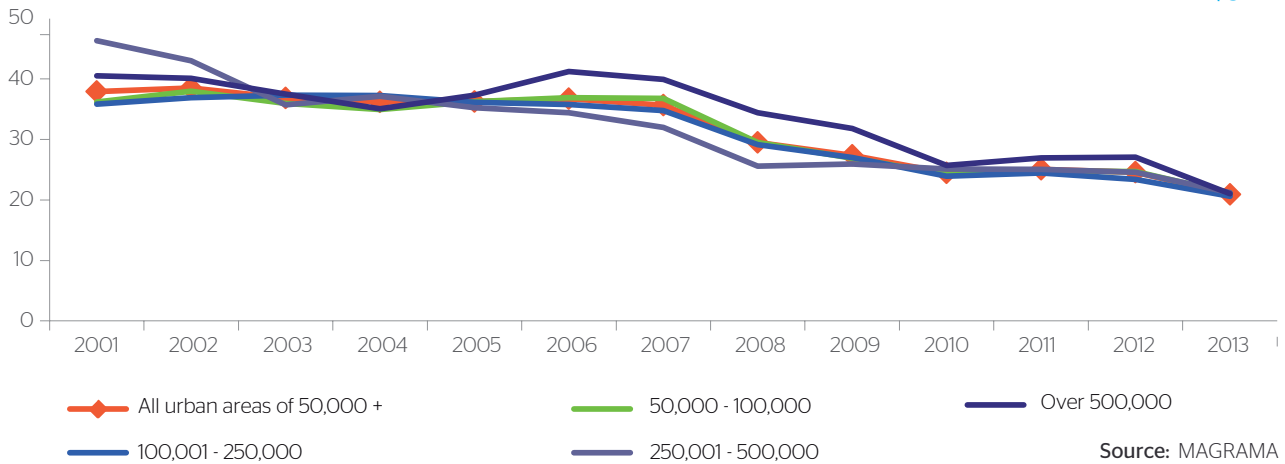
Ministry of Agriculture, Food and the Environment, 2015. Air Quality Database. Directorate-General for Environmental Quality and Assessment and Natural Environment.

#### Recommended Websites:

- <http://www.magrama.gob.es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/>
- <http://www.magrama.gob.es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/calidad-del-aire/estudios/>
- [http://www.magrama.gob.es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/Informe\\_evaluacion\\_calidad\\_aire\\_Espa%C3%B1a\\_2013\\_tcm7-345101.pdf](http://www.magrama.gob.es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/Informe_evaluacion_calidad_aire_Espa%C3%B1a_2013_tcm7-345101.pdf)
- [http://www.magrama.gob.es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/calidad-del-aire/mediciones/Visor\\_CA.aspx](http://www.magrama.gob.es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/calidad-del-aire/mediciones/Visor_CA.aspx)
- <http://www.eea.europa.eu/data-and-maps/indicators/exceedance-of-air-quality-limit-3/assessment#toc:2>

## Average annual PM10 concentrations in urban areas

Average annual PM10 concentrations in urban areas by range of population ( $\mu\text{g}/\text{m}^3$ )



Particles may have a primary origin, when they are emitted directly to the atmosphere (naturally or as a consequence of human activities) or a secondary origin, if they are generated in the atmosphere as a consequence of chemical reactions from precursor gases (mainly  $\text{SO}_2$ ,  $\text{NO}_x$ ,  $\text{NH}_3$  and COVNM). In urban areas, most particles are directly originated as a consequence of road traffic, followed by the formation of secondary particles, industrial, residential and domestic emissions, construction, suspension of mineral dust (the contribution of natural sources due to the introduction of dust from the Sahara is very important) and the contribution of sea and ship spray in coastal areas.

For all cities with more than 50,000 inhabitants, during the period 2001-2013, the average concentration of particles larger than 10 was reduced by 44.8% from 37.9  $\text{g}/\text{m}^3$  to 20.9  $\text{g}/\text{m}^3$ . Interestingly, this decrease has been higher in populations with more than 250,000 inhabitants, particularly in those with a size between 250,000 and 500,000 inhabitants, and lower in those with less than 250,000 inhabitants.

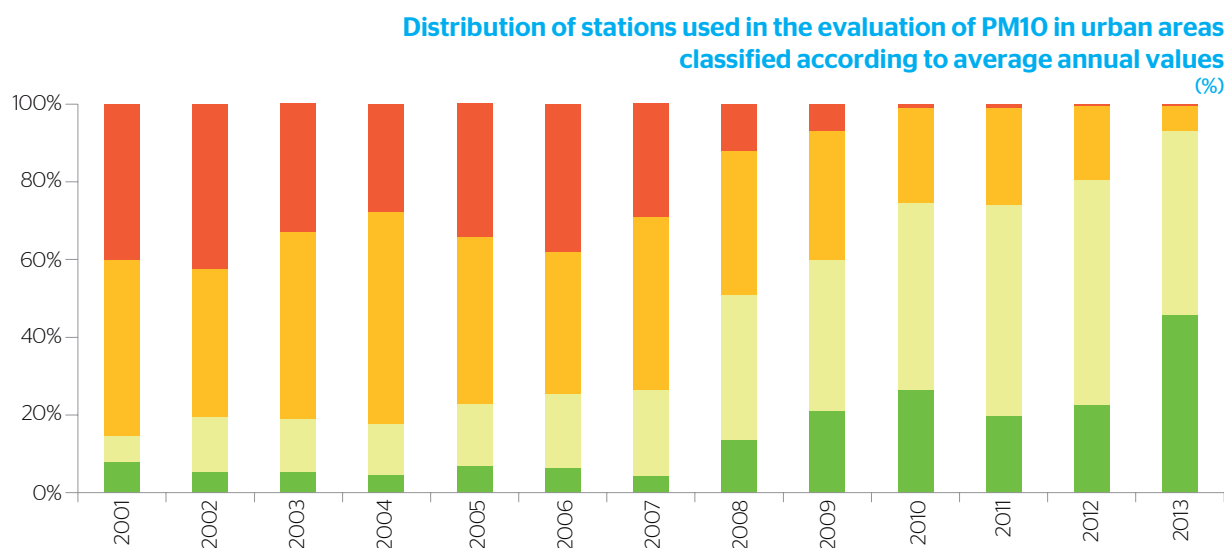
Highest values regarding average concentrations correspond to cities with more than 500,000 inhabitants, which are populations characterised by heavier traffic, more industrial development and a higher use of domestic heaters depending on the geographic area.

The report "Assessment of Air Quality in Spain 2013" describes the behaviour of PM10 concentration for 2013 in relation to 2012 in a positive way, with a remarkable decrease in the number of areas in which the daily limit value is exceeded (DLV). After deducting the share of particulate matter from natural sources, the final balances shows that the daily limit value has not been met in six different areas (in comparison to 10 in 2011 and nine in 2012). On the other hand, the annual limit value (ALV) was exceeded in one area, just like in the previous four years.

The percentage of stations used for the assessment of PM10 in urban areas with a population over 50,000 inhabitants, classified according to the average annual PM10 values, show an increase in the number of urban areas below the Lower Assessment Threshold (LAT).

The highest average PM10 concentration was the one measured in cities with the largest populations, in which traffic is heavier

There is a decrease in average PM10 concentrations, although in those populations with over 500,000 inhabitants there were exceptional increases in 2006, 2011 and 2012



According to the European Environment Agency (indicator “Exceeding of limit values of air quality in urban areas (CSI 004) - Evaluation published in November 2014”), 21.5% of urban population was exposed in 2012 to NO<sub>2</sub> concentrations over those values regulated by the EU. Such percentage amounted to 41.3% in 2003, year in which the highest percentage of inhabitants being exposed to values over the limits was estimated.

#### Definition of the Indicator:

The indicator shows the average annual MP10 concentration in urban areas, which are municipalities with more than 50,000 inhabitants. The information is offered with disaggregated data for four ranges according to population sizes of the municipalities (50,000-100,000 inhabitants, 100,001-250,000 inhabitants, 250,001-500,000 inhabitants and more than 500,000 inhabitants) as well as for all municipalities with a population over 50,000 inhabitants.

#### Methodological Notes:

- The indicator refers just to particulate materials with a diameter under 10 microns ( $\mu$ ).
- The historical series for the distribution of the average annual MP10 levels in evaluation stations in municipalities with more than 50,000 inhabitants shows the percentage of stations the annual average of which is classified in each value range, based on regulation levels (limit value and upper and lower evaluation thresholds).
- Spain has always had high levels of particles, the concentration of which increases naturally due to the intrusion of African dust. Therefore, a procedure has been established for assessing the impact such natural sources have on particulate levels so as to assess in turn the particulate levels exclusively originated as a consequence of human activities for the purposes of compliance with limit values excluding the ones caused by natural sources (as provided by Royal Decree 102/2011 in article 22.2 and Directive 2008/50/EC in article 20).
- The references on the regulated values may be checked in the “*Air Quality in Spain Report 2013*”, prepared by the Directorate General for Environmental Quality and Assessment and Natural Environment of the MAGRAMA.

#### Source:

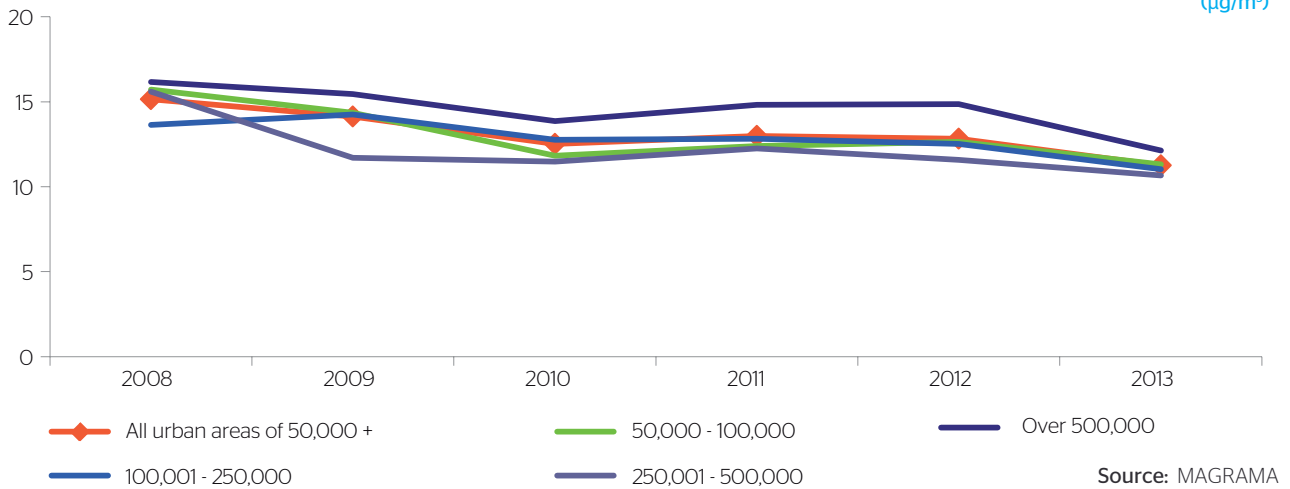
Ministry of Agriculture, Food and the Environment, 2015. Air Quality Database. Directorate-General for Environmental Quality and Assessment and Natural Environment.

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- [http://www.magrama.gob.es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/Informe\\_evaluacion\\_calidad\\_aire\\_Espa%C3%B1a\\_2013\\_tcm7-345101.pdf](http://www.magrama.gob.es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/Informe_evaluacion_calidad_aire_Espa%C3%B1a_2013_tcm7-345101.pdf)
- [http://www.magrama.gob.es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/calidad-del-aire/mediciones/Visor\\_CA.aspx](http://www.magrama.gob.es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/calidad-del-aire/mediciones/Visor_CA.aspx)
- <http://www.eea.europa.eu/data-and-maps/indicators/exceedance-of-air-quality-limit-3/assessment#toc-2>

## Average annual MP2.5 concentrations in urban areas

Average annual PM2.5 concentrations in urban areas by range of population ( $\mu\text{g}/\text{m}^3$ )



Out of the six years under assessment, only 2009, 2010 and 2013 show decreases in average annual PM2.5 concentrations

As in the case with PM10, the highest average PM2.5 concentrations were measured in cities with the large populations, where traffic is heavier

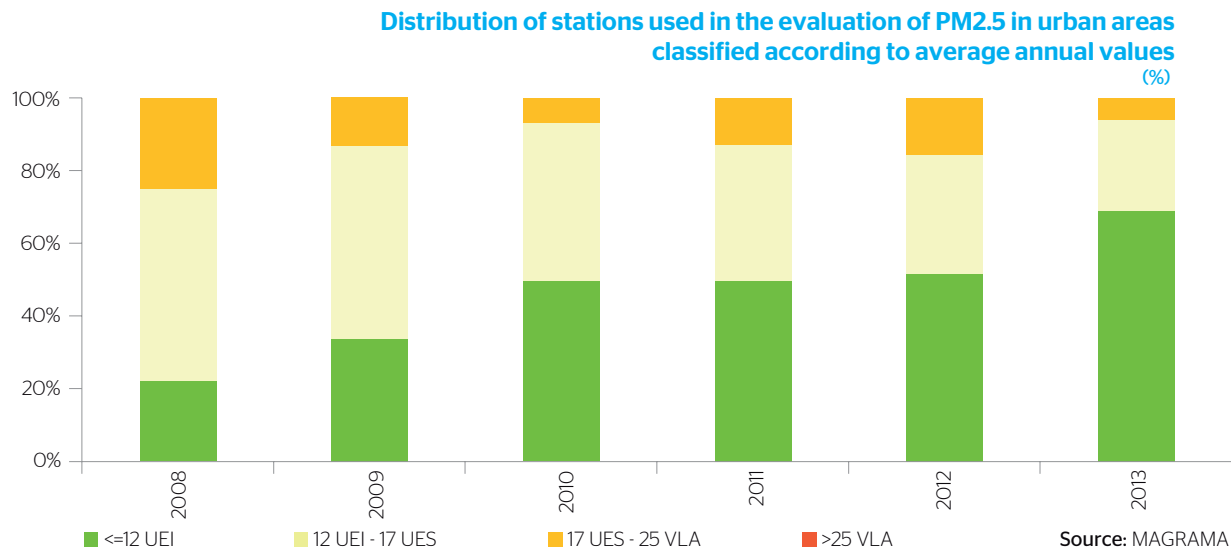
As in the case with PM10, PM2.5 may have a primary origin when emitted directly to the atmosphere, or a secondary one, if generated in the atmosphere as a result of chemical reactions from precursor gases. In urban areas, most particles are directly originated as a consequence of road traffic (see introduction of PM10 indicator).

Official assessment of this pollutant began in 2009. The series available is shorter than the others, so it is more difficult to draw valid conclusions on the evolution of the parameter. For the period 2008-2013 in all cities with more than 50,000 inhabitants, the average concentration of particulates over 2.5 was reduced by 25.7% (from 15.14  $\text{g}/\text{m}^3$  to 11.25  $\text{g}/\text{m}^3$ ). As in the case with PM10, the decrease has been sharper for populations with a size between 250,000 and 500,000 inhabitants (31.7%), and lower for those between 100,000 and 250,000 inhabitants (19.2%).

Cities with more than 500,000 show the highest average concentration values. As in the case with PM10, the influence of the heavier traffic in these cities is one of the main causes.

According to the report "Assessment of Air Quality in Spain 2013", in 2013, the target value was not exceeded in any of the 135 areas defined for the evaluation of PM2.5 particles and therefore, nor the limit value plus the tolerance margin. Therefore, the good status of air quality regarding this pollutant is maintained, complying with the target value in all areas assessed.

The percentage of stations used in the assessment of PM2.5 in urban areas with a population over 50,000, classified according to average annual PM10 values, shows how there has been an increase in the number of areas below the Lower Evaluation Threshold (LET) and the number between the Lower; the Upper Evaluation Threshold (UET) have been progressively reduced, as well as the ones between the latter and the Annual Limit Value (ALV). From 2008, there is no stations exceeding the ALV.



According to the European Environment Agency (indicator “*Exceeding of limit values of air quality in urban areas (CSI 004) - Evaluation published in November 2014*”), 11.0% of urban population was exposed in 2012 to MP<sub>2.5</sub> concentrations over those values regulated by the EU. Such percentage amounted to 13.9% in 2011, year in which the highest percentage of inhabitants being exposed to values over the limits was estimated.

#### Definition of the Indicator:

The indicator shows the average annual MP<sub>2.5</sub> concentration in urban areas, which are municipalities with more than 50,000 inhabitants. The information is offered with disaggregated data for four ranges according to the population size of the municipalities (50,000-100,000 inhabitants, 100,001-250,000 inhabitants, 250,001-500,000 inhabitants and more than 500,000 inhabitants) as well as for all municipalities with a population over 50,000 inhabitants.

#### Methodological Notes:

- The indicator refers just to particulate materials with a diameter under 2.5 microns ( $\mu$ ).
- The historical series for the distribution of the average annual MP<sub>2.5</sub> levels in evaluation stations in municipalities with more than 50,000 inhabitants shows the percentage of stations the annual average of which is classified in each value range, based on regulation levels (limit value and upper and lower evaluation thresholds).
- The references on the regulated values may be checked in the “*Air Quality in Spain Report 2013*”, prepared by the Directorate General for Environmental Quality and Assessment and Natural Environment of the MAGRAMA.

#### Source:

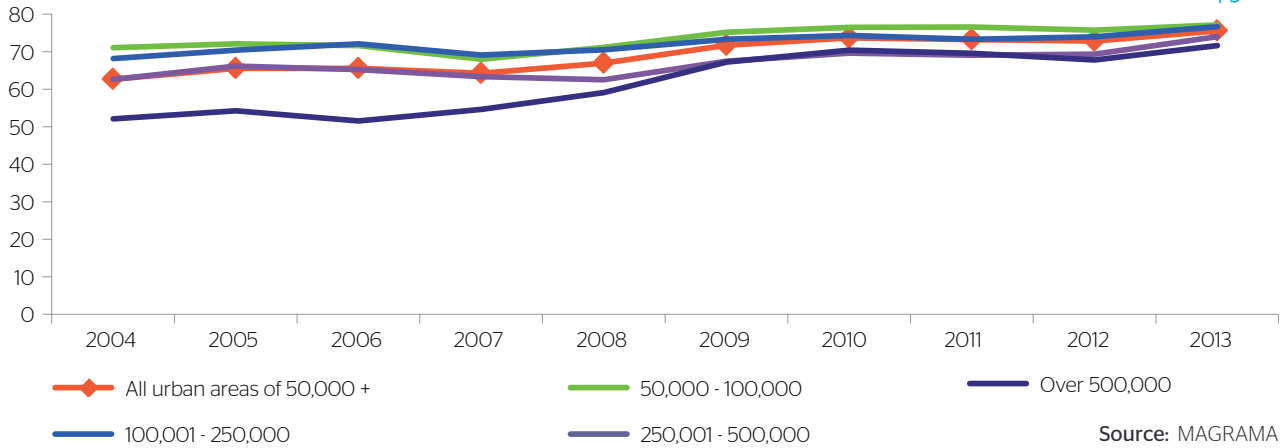
Ministry of Agriculture, Food and Environment, 2015. Air Quality Database. Directorate-General for Environmental Quality and Assessment and Natural Environment.

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- [http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/Informe\\_evaluacion\\_calidad\\_aire\\_Espa%C3%B1a\\_2013\\_tcm7-345101.pdf](http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/Informe_evaluacion_calidad_aire_Espa%C3%B1a_2013_tcm7-345101.pdf)
- [http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/calidad-del-aire/mediciones/Visor\\_CA.aspx](http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/calidad-del-aire/mediciones/Visor_CA.aspx)

## Average annual O<sub>3</sub> concentrations in urban areas

Average annual concentration of daily maximum eight-hour values for O<sub>3</sub> in urban areas by range of population (µg/m<sup>3</sup>)



O<sub>3</sub> concentrations are higher in suburban and rural areas than in urban areas (with heavier traffic)

In cities, there has been a rise in O<sub>3</sub> levels relation to the reduction of NO<sub>x</sub> (since NO does not react with O<sub>3</sub> thus reducing it locally)

Due to the high solar irradiance and the emissions of its precursors, O<sub>3</sub> concentrations have increased in the last few years.

O<sub>3</sub> acts as a powerful and aggressive oxidising agent in the troposphere, with negative effects on health and ecosystems, and it also contributes to other global problems such as climate change. Tropospheric O<sub>3</sub> is generated secondarily from other precursor gases (NO<sub>x</sub> and COV, mainly). Solar radiation contributes to a great extent in its formation, so its levels are higher in Southern Europe during spring and summer.

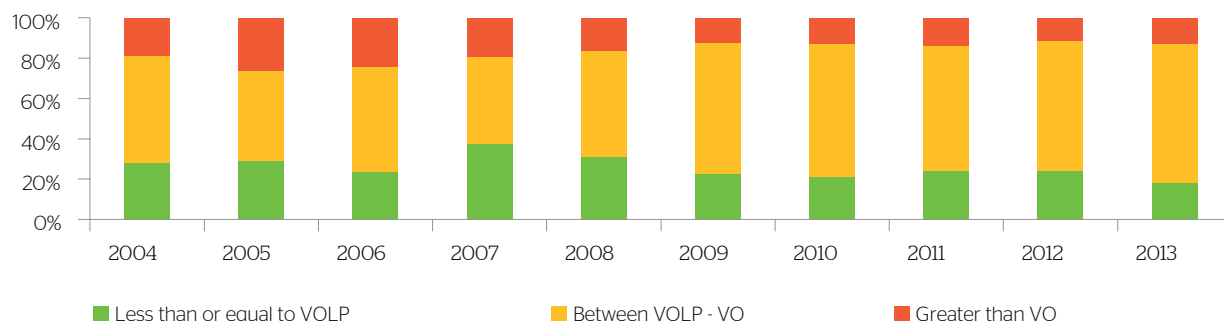
Over recent years, there has been an increase in the annual average concentration of tropospheric ozone. Between 2004 and 2013, regarding all cities with more than 50,000 inhabitants, the average concentration of tropospheric O<sub>3</sub> increased by 20.7%; cities with more than 500,000 inhabitants showed a greater increase. However, as it can be seen in the chart, these same cities are ones which show average O<sub>3</sub> concentrations lower than the those registered in cities with smaller populations. The explanation lies in the fact that in urban areas, in which there is a higher concentration of NO<sub>x</sub>, O<sub>3</sub> levels are lower as a high percentage of O<sub>3</sub> is quickly consumed by means of the oxidation of NO into NO<sub>2</sub>. This also explains why in those urban areas with heavier traffic, O<sub>3</sub> levels are usually much lower than in less polluted environments.

The conclusions of the "Air Quality in Spain Report 2013" (MAGRAMA, 2014), state that tropospheric ozone (O<sub>3</sub>) was still showing, in 2013, high levels in suburban or rural areas due to high solar irradiance and to the fact that the emission levels of its precursors are maintained (NO<sub>x</sub> and volatile organic compounds). The situation is similar to that of previous years, with a certain improvement in the number of areas which exceed the target value for health protection, from 51 in 2012 to 47 in 2013.

In urban areas with a population over 50,000 inhabitants, the percentage of stations used for the evaluation of O<sub>3</sub> which are under the Long-Term Target Value (LTTV) and above the Target Value (TV) have decreased in the last few years.

On the other hand, % of stations with an annual average concentration between the LTTV and the Target Value (TV) have increased from 81 in 2004 to 136 in 2013. In this case, the annual average is not classified within ranges but considers the average exceedances of 120 µg/m<sup>3</sup> regarding daily eight-hour maximum values per year (average taking into account 3 years for TV and the last year for the LTTV). The evolution of compliance starts in 2004 that is the date in which the regulated value of O<sub>3</sub> came into force.

### Distribution of stations used in evaluation of O<sub>3</sub> in urban areas classified according to different values legislated



VOLP = Long Term Target Value      VO = Target Value

Source: MAGRAMA

According to the indicator “Exceeding of limit values of air quality in urban areas (CSI 004) - Evaluation published in November 2014”, 14.2% of urban population was exposed in 2012 to O<sub>3</sub> concentrations over those values regulated by the EU. Such percentage amounted to 58.2% in 2013, year in which the highest percentage of inhabitants being exposed to values over the limits was estimated.

#### Definition of the Indicator:

The indicator shows the average annual concentration of tropospheric ozone (O<sub>3</sub>) in urban areas, which are municipalities with more than 50,000 inhabitants. The information is offered with disaggregated data for four ranges according to population sizes of the municipalities (50,000-100,000 inhabitants, 100,001-250,000 inhabitants, 250,001-500,000 inhabitants and more than 500,000 inhabitants) as well as for all municipalities with a population over 50,000 inhabitants.

#### Methodological Notes:

- The historical series for the distribution of the compliance with TV and LTT regarding O<sub>3</sub> in stations used for the evaluation of municipalities with more than 50,000 inhabitants shows the percentage of stations the annual average of which is classified in each value range, based on regulation levels (target value and long-term target).
- The references on the regulated values may be checked in the “Air Quality in Spain Report 2013”, prepared by the Directorate General for Environmental Quality and Assessment and Natural Environment of the MAGRAMA.

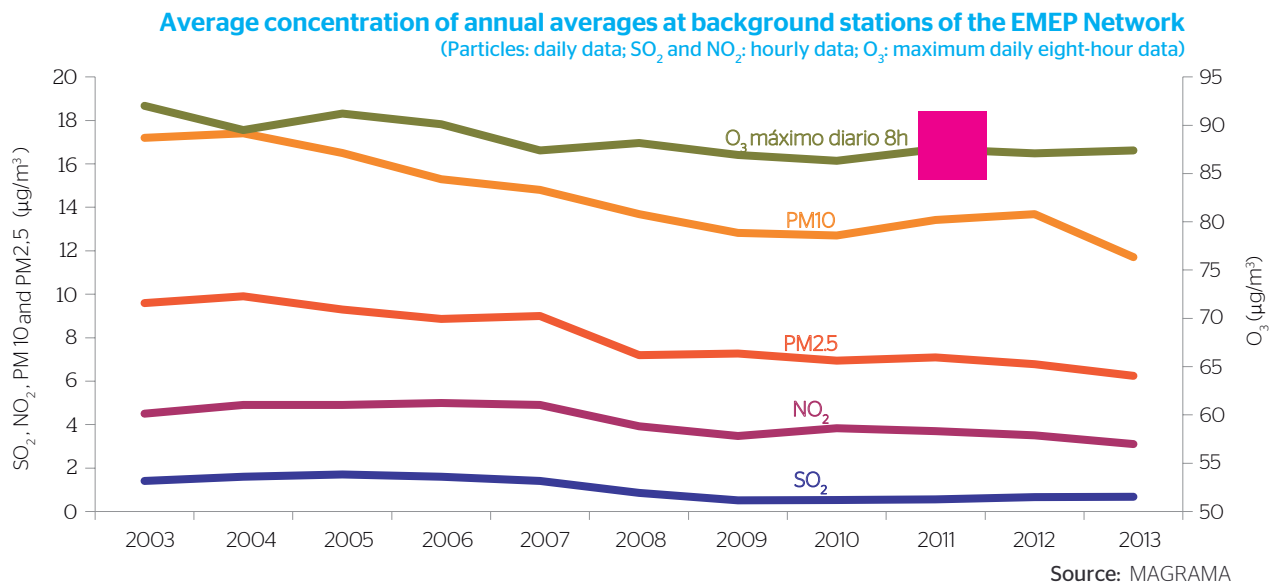
#### Source:

Ministry of Agriculture, Food and Environment, 2015. Air Quality Database. Directorate-General for Environmental Quality and Assessment and Natural Environment.

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- [http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/Informe\\_evaluacion\\_calidad\\_aire\\_Espa%C3%B1a\\_2013\\_tcm7-345101.pdf](http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/Informe_evaluacion_calidad_aire_Espa%C3%B1a_2013_tcm7-345101.pdf)
- [http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/calidad-del-aire/mediciones/visor\\_CA.aspx](http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/calidad-del-aire/mediciones/visor_CA.aspx)

## Regional background air quality: average concentrations of SO<sub>2</sub>, NO<sub>2</sub>, PM<sub>2.5</sub>, PM<sub>10</sub> and O<sub>3</sub>



There is an improvement of regional background air quality in Spain, shown by the reduction of levels of SO<sub>2</sub>, PM<sub>2.5</sub>, PM<sub>10</sub> and NO<sub>2</sub>

Regarding O<sub>3</sub>, levels remain more stable with a less significant decrease (only 5% between 2003 and 2013)

The regional background air pollution is the one existing in those areas away from direct emission sources. It is used as the reference for the background pollution levels of a certain region caused by anthropogenic, natural, regional or transboundary sources. Its measurements are representative of air quality in the absence of polluting sources and they are also used to support other Spanish air quality networks as regards the evaluation of the air quality throughout the territory.

The annual average of average values estimated from the measurements registered at background stations for SO<sub>2</sub>, NO<sub>2</sub> and PM<sub>2.5</sub> is relatively low and in no case do they exceed regulated values for health protection and for the protection of vegetation. The average calculated for PM<sub>10</sub> does not exceed regulated values either; such elements, as in the case with O<sub>3</sub> offer average concentration values slightly higher than the other elements. In any case, the average concentrations of all pollutants show a downward linear trend, very significant in relation to SO<sub>2</sub>, which between 2003 and 2013, has decreased by 52.1%. Reduction in NO<sub>2</sub> has also been very remarkable (30.9%) as well as regarding particulates (32.0% for PM<sub>10</sub> and 35.0% regarding PM<sub>2.5</sub>).

However, the average of average O<sub>3</sub> concentrations has only decreased by 5.0% showing, in some cases, year-on-year variations with slight increases. In analysing these patterns it must be taken into account that O<sub>3</sub> is a secondary pollutant originating from the photochemical reaction between nitrogen oxides and volatile organic compounds with the aid of solar radiation and that the highest concentrations occur away from cities or in their surroundings. This latter circumstance is one of the location requirements for the installations of networks for this network.

It must be highlighted that this assessment offer a very general overview and that there might be exceptional situations in which regulated values are exceeded.



**Definition of the Indicator:**

Evolution of the average annual concentrations of SO<sub>2</sub>, NO<sub>2</sub>, PM2,5, PM10 and O<sub>3</sub> in background stations of the EMEP/VAG/CAMP networks. The concentration of particles is calculated from daily data, whereas the average concentrations of SO<sub>2</sub> and NO<sub>2</sub> are calculated using hourly data. For the calculation of average O<sub>3</sub> concentrations, daily eight-hour maximum values are used.

**Methodological Notes:**

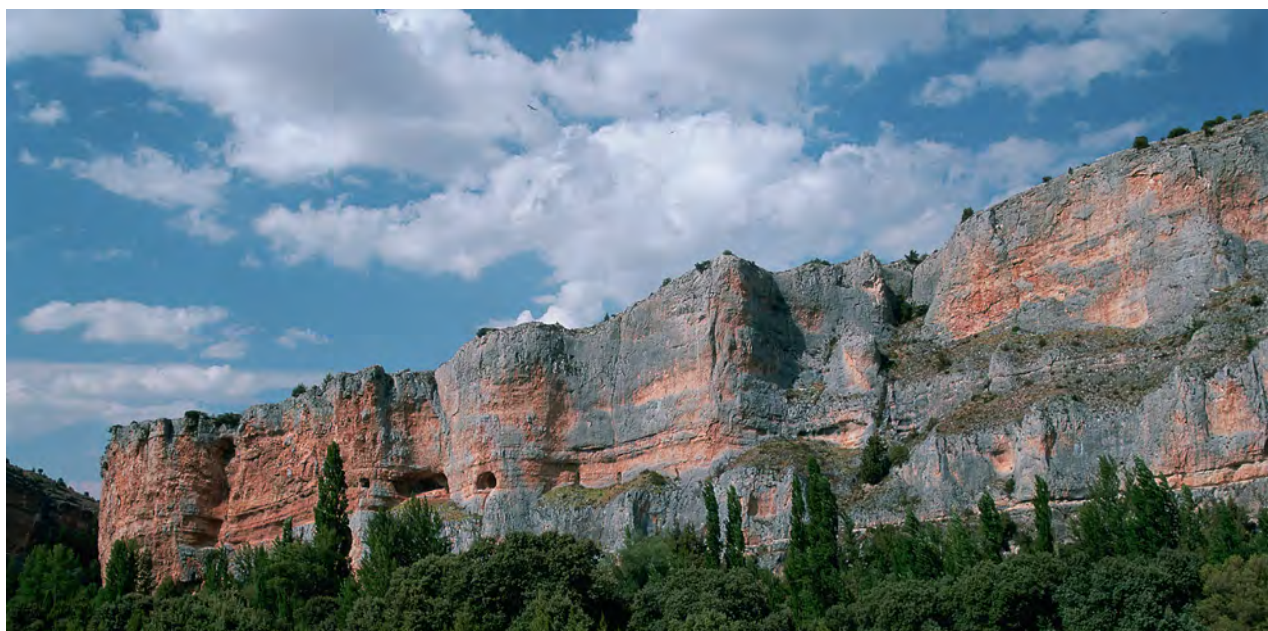
- The indicator assesses, in a general way, the background pollution existing in Spain. In order to do so, the total average value of the average concentrations of all stations included in the EMEP/VAG/CAMP Network is presented for each pollutant and year, thus offering approximate information for atmospheric background pollution in Spain. It does not provide information on the isolated cases of exceedances that may arise in certain stations.
- The EMEP (European Monitoring Evaluation Programme), created within the framework of the Geneva Convention, measures atmospheric background pollution. The Global Atmosphere Watch (GAW) is a project created by the World Meteorological Organization (WMO). The CAPM Programme ("Comprehensive Atmosphere Monitoring Programme") created within the framework of the OSPAR Convention aims to collect atmospheric inputs in the North-east Atlantic regions and study their effects on the marine environment. The EMEP/GAW/CAPM Network, which is used to guarantee compliance with the goals established by these three programmes, monitors tropospheric levels of residual air pollution -or background pollution- and its sedimentation of the earth's surface, so as to protect the environment.
- Royal Decree 102/2011, of 28 January, on the improvement of air quality (transposing Directive 2008/50/EEC of the European Parliament and of the Council of 21 May 2008), established those threshold values for the protection of health and critical levels for the protection of the plant life as regards NO<sub>x</sub> and SO<sub>2</sub>.
- The references on the regulated values may be checked in the "Air Quality in Spain Report 2013", prepared by the Directorate General for Environmental Quality and Assessment and Natural Environment of the MAGRAMA.

**Source:**

Ministry of Agriculture, Food and the Environment, 2015. Air Quality Database. Directorate-General for Environmental Quality and Assessment and Natural Environment.

**Recommended Websites:**

- <http://www.magrama.gob.es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/>
- <http://www.magrama.gob.es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/calidad-del-aire/estudios/>
- [http://www.magrama.gob.es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/Informe\\_evaluacion\\_calidad\\_aire\\_Espa%C3%B1a\\_2013\\_tcm7-345101.pdf](http://www.magrama.gob.es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/Informe_evaluacion_calidad_aire_Espa%C3%B1a_2013_tcm7-345101.pdf)
- [http://www.magrama.gob.es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/calidad-del-aire/mediciones/Visor\\_CA.aspx](http://www.magrama.gob.es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/calidad-del-aire/mediciones/Visor_CA.aspx)





# EMISSIONS TO THE ATMOSPHERE 2.3 AND CLIMATE CHANGE

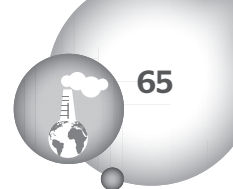
The Programme “Pure Air” for Europe was approved in December 2013 and it establishes the policy of the EU on air quality for the next four years. It includes the proposal for a new Directive on national emission limits and a new Directive proposal for the reduction of pollution from medium-sized combustion plants.

Today, Directive 2001/81/EC, on national emission limits for certain air pollutants and Directive 2008/50/EC on ambient air quality and cleaner air for Europe establish emission limits for acidifying and eutrophying substances and ozone precursors as well as quality targets for ambient air so as to avoid, prevent or reduce the negative effects on human health and the environment.

The “Roadmap for Diffuse Sectors 2020”, of the Ministry of Agriculture, Food and the Environment of September 2014, establishes a series of measures aimed at reducing emissions of greenhouse gases so as to comply with the requirements for the mitigation of climate change and the increase of economic activity and employment rates. Focusing on diffuse sectors, it analyses 43 measures divided into six main sectors: residential, transportation, agriculture, waste, fluorinated gases and industry unrelated to the commerce of emission rights. It is step prior to the preparation of the “Low Carbon Development Strategy” which Spain, just like the other European countries, must prepare.

On the other hand, the third edition of the ‘Clima Projects’, the Plans to Promote the Environment (PIMA, as per the Spanish Acronym), for the renewal of commercial vehicles, farming machinery or hotel infrastructures, which complement the Government’s Efficient Vehicle Incentive Programme (PIVE), together with the “Carbon Footprint Register” are examples of initiatives in the fight against climate change and the boosting of economic growth.

The “2030 Climate and Energy Framework”, of 2014, proposes new targets and measures to make the EU’s economy and energy system more competitive, secure and sustainable. It includes targets for reducing greenhouse gas emissions. Among others, the Council of Europe agreed in October 2014, for the EU and year 2030: a binding target of at least a reduction of 40% in emissions of greenhouse gases (GHG) relative to 1990 levels, a binding renewable energy target of at least 27% of energy consumption and an indicative target of at least 27% for the improvement of energy efficiency. This framework also develops the “2013-2020 Energy and Climate Change Package” of 2008, the “The Roadmap towards a Competitive Low Carbon Economy”, presented in 2013, and which foresees that in 2050 the EU reduces its emissions by 80%, below 1990 levels, by means of national reductions and the establishment of intermediate targets (reductions by 40% in 2030 and 60% in 2040).



### Greenhouse gas emissions

- GHG emissions decreased by 7.7% in 2013; however, in comparison to the Kyoto Protocol, these emissions increased by 10.3%.
- In 2012 Spain accounted for 7.5% of total emissions of GHG of the EU-28.
- With 7.28 t CO<sub>2</sub>-eq/inhabitant and 0.33 kg CO<sub>2</sub>-eq/Euro of GDP, Spain ranked ninth within the EU-28 countries as regards both variables. These values are below the EU-28 average.
- Spain has complied with its commitments of the first period of the Kyoto Protocol (2008-2012).

### Particulate matter emissions

- The emission of particulate matter in Spain has decreased more than 30% during the period 2000-2013.
- PM<sub>2.5</sub> decreased by 31.3% and PM<sub>10</sub> by 32.1%
- In 2012, Spain contributed with 9.2% of all PM<sub>10</sub> of EU-28 and 10.9% of all PM<sub>2.5</sub>.

### "Carbon Footprint" Register

- In 2014, and in just eight months, 77 carbon footprints were registered in Spain.
- Just four sectors comprise more than 60% of the total "carbon footprints" registered.
- In 2014, three projects for the absorption of carbon dioxide were implemented and no project for the compensation of the carbon footprint.

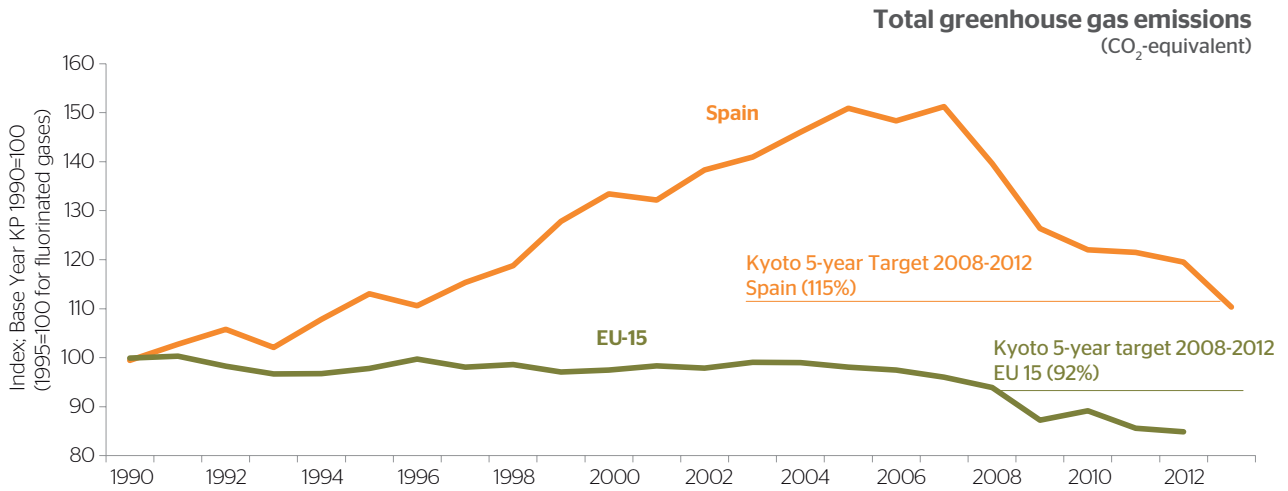
### Acidifying and eutrophying and tropospheric ozone precursors gas emissions

- Global emissions of acidifying and eutrophying gases and precursors of tropospheric ozone, show a downward trend which, between 1990 and 2013, corresponded to 58.1% and 36.2% respectively.
- This reduction also occurs in all gases individually; NH<sub>3</sub> is the only one which has increased.

### Spanish Carbon Fund 'Clima Projects'

- In 2014, 42 'Clima Projects' were approved. These are to be added to 37 projects in 2012 and 49 in 2013.
- The Spanish Carbon Fund 'Clima Projects' are designed as one of the tools for the reduction of CO<sub>2</sub> emissions and implementation of the transformation path for the Spanish production system into a low-carbon model.

## Greenhouse gas emissions



GHG emissions decreased by 7.7% in 2013; in comparison to the Kyoto Protocol, these emissions increased by 10.3%

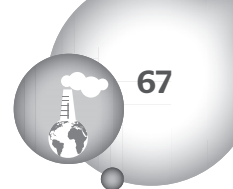
Spain has complied with its commitments of the first period of the Kyoto Protocol (2008-2012)

In 2013, total emissions of greenhouse gases (GHG) were estimated at 319,671 kilotonnes (kt) of CO<sub>2</sub>-eq, 7.7% lower to that of year 2012. Therefore, the downward trend which started in 2008 is maintained; such trend gave rise, after the increase experienced in 2007, to an increase of 10.3% in relation to the base year of the Kyoto Protocol (KP).

Regarding the commitment balance undertaken by means of the Kyoto Protocol, the annual average of CO<sub>2</sub>-eq during the five-year period 2008-2012 was 364,538.4 kt, a figure 25.8% above those established in the base year of said Protocol. The use of flexibility mechanisms has allowed compliance with the commitments undertaken.

By type of gas, CO<sub>2</sub> remained responsible for most total emissions, with 78% of the 2013 total. Followed by methane (12%) and N<sub>2</sub>O (7%), whereas all fluorinated gases only represented 3% of the total.

Regarding origins, in 2013 emissions coming from the energy processing sector represented 75% of the total; transportation (25%) and power generation (23%), are the main sub-sectors. On the other hand, emissions from agriculture and livestock activities amounted to 12% of the total, whereas industrial processes represented 8% and waste 5%. The main sectors which have contributed to the decrease of total emissions in 2013 were the energy sector (-9.7%), influenced by the reduction of emissions from power generation (due to the decrease in carbon and natural gas consumption of thermal plants) and industrial processes (-5.3%). Emissions associated with agriculture, increased by 1.7% influenced by the increase in the use of fertilizers.



Regarding the EU-28 for the year 2012, the collection of data on GHG emissions to the atmosphere by the European Environmental Agency (EEA) ranks Spain, with a total of 340,808.6 kt CO<sub>2</sub>-eq, in sixth position, with 7.5% of total emissions. However, per capita, Spain ranked ninth, with 7.28 t CO<sub>2</sub>-eq /inhabitant, a figure lower than the 9 t CO<sub>2</sub>-eq /inhabitant which is the EU-28 average. Spain also ranked ninth in terms of GDP, having emitted 0.33 kg CO<sub>2</sub>-eq /Euro which is also lower than the EU-28 average, which in 2012 was 0.35 kg CO<sub>2</sub>-eq /Euro.

Spain emitted in 2012, 7.5% of total emissions of GHG of the EU-28

With 7.28 t CO<sub>2</sub>-eq / inhabitant and 0.33 kg CO<sub>2</sub>-eq /Euro of GDP, Spain ranked nine among EU-28 countries for both variables. These values are below the EU-28 average

#### Definition of the Indicator:

The indicator presents the aggregated emissions of greenhouse gases included in the Kyoto Protocol, expressed in CO<sub>2</sub>-eq of Spain and of the EU-15.

#### Methodological Notes:

- This indicator shows the total emissions of the six main gases contributing to the greenhouse effect (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs and SF<sub>6</sub>), jointly expressed as CO<sub>2</sub> equivalent (CO<sub>2</sub>-eq) as an index 1990=100 and 1995=100 for fluorinated gases. For that purposes, the atmospheric warming potential of the 4<sup>th</sup> assessment report of the Intergovernmental Panel on Climate Change (IPCC) were used.
- Only gross emissions are included, excluding the net sink (collections minus emissions) corresponding to the group "Uses of soil, changes in the use of soil and forestry". This group includes the emissions or absorption of greenhouse gases related to forests (including fires), crops, grazing lands, as well as human settlements (associated to deforestation and conversion of crops and grazing lands in settlements).

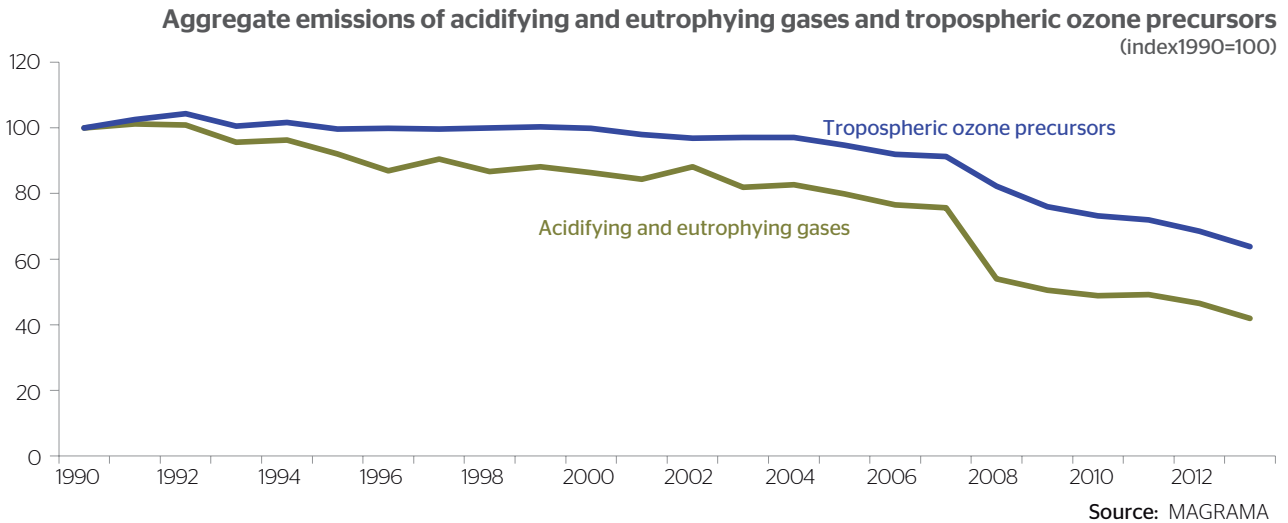
#### Source:

- Ministry of Agriculture, Food and the Environment, 2015. Spanish Inventory of Greenhouse Gases. Series 1990-2013. Summary of results. Madrid, January 2015.
- European Environmental Agency. EEA greenhouse gas - data viewer. En Home / Data and maps / Datasets / Interactive data viewers / EEA greenhouse gas - data viewer.

#### Recommended Websites:

- <http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/sistema-espanol-de-inventario-sei/>
- <http://www.eea.europa.eu/data-and-maps/data/data-viewers/greenhouse-gases-viewer>
- <http://ec.europa.eu/clima/policies/>
- [http://ec.europa.eu/clima/policies/adaptation/what/documentation\\_en.htm](http://ec.europa.eu/clima/policies/adaptation/what/documentation_en.htm)

## Acidifying and eutrophying and tropospheric ozone precursors gas emissions



Aggregated emissions of acidifying and eutrophying gases and precursors of tropospheric ozone, show a downward trend which, between 1990 and 2013 corresponded to 58.1% and 36.2% respectively

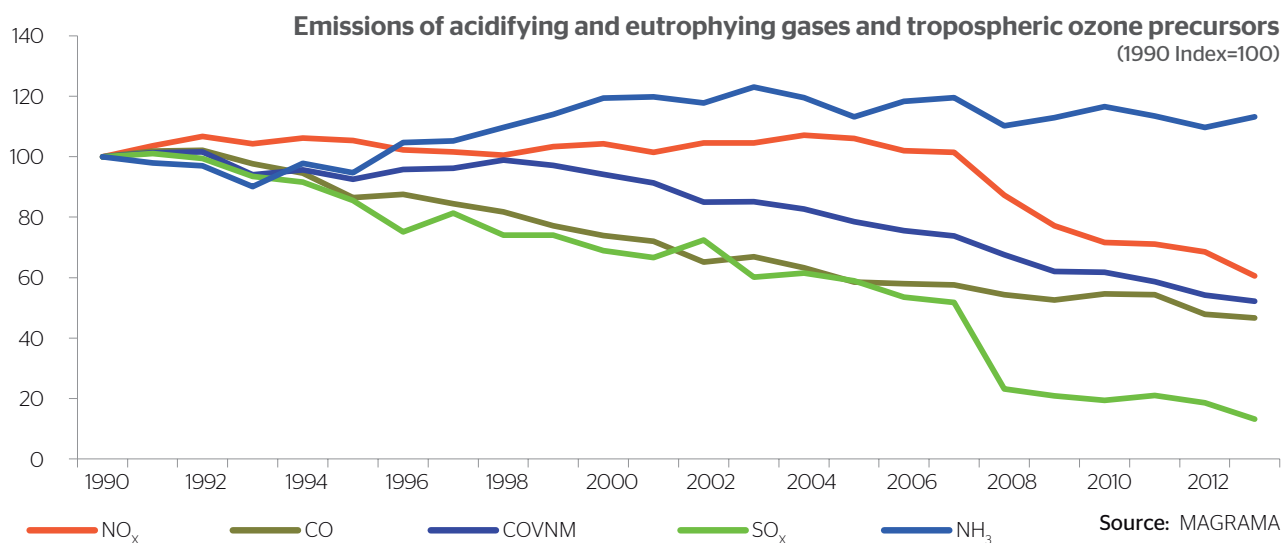
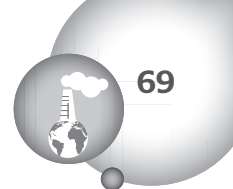
Aggregated emissions of acidifying and eutrophying substances, expressed as equivalent in acid, decreased by 58.1% between 1990 and 2013. Those corresponding to tropospheric ozone (expressed as equivalent Non-Methane Volatile Organic Compounds -NMVOCs), decreased by 36.2% during the same period.

By gas type,  $\text{SO}_x$  are the ones which showed the sharpest reduction (86.8%) mainly due to the decrease in the use of carbon in thermal plants; such reduction was particularly remarkable in 2008.

The industry sector and refineries were also key sectors for the reductions, as well as road transport, the emissions of which, for example, decreased by 4.1% in 2013. CO emissions decreased by 53.3%, even those no decreases were registered in 2010 and 2011. NMVOCs also decreased during the same period by 47.8%. Transport, mainly due to technology improvements, and the use of solvents, are two of the activities which have contributed to such decrease to the greater extent.  $\text{NO}_x$  fell by 39.4%, very apparent since 2007; sectors such as energy production, due to the expansion of combined-cycle plants and, again, technology developments for the vehicle fleet, were key elements for this evolution.

This reduction also occurs for most gases individually; except in the case with  $\text{NH}_3$  emissions, which is the only one to have increased

On the other hand,  $\text{NH}_3$  emissions increased by 13.1% between 1990 and 2013, with a trend characterised by annual fluctuations. Their main source is the treatment and elimination of waste in industrial processes and, above all, in agricultural and livestock-related activities. Fluctuations in the use of nitrogen fertilisers in agriculture is one of the causes that explain this irregular behaviour.



Regarding compliance with the targets of the Directive on National Emission Ceilings, total emissions of SO<sub>x</sub> and NMVOCs meet those targets established since 2010. On the other hand, NO<sub>x</sub> emissions complied with the maximum emission limit in 2013, whereas NH<sub>3</sub> emissions exceeded such limit that same year.

#### Definition of the Indicator:

The indicator shows the emission indexes of the main gases responsible for the acidification and eutrophication of the environment (SO<sub>2</sub>, NO<sub>x</sub> and NH<sub>3</sub>) and that of the precursors of tropospheric ozone (NO<sub>x</sub>, NMVOCs, CO and CH<sub>4</sub>), both in an aggregated and in an individual manner for each gas and referred to 1990 as the base year (1990=100). CH<sub>4</sub> was not included since the complete series was not available when the indicator was prepared.

#### Methodological Notes:

Emissions of acidifying and eutrophying substances are presented as equivalents in acid (potential generators of hydrogen ions). The weighing factors used are: 31.25 acid equivalents/kg for SO<sub>2</sub> (2/64 acid equivalents/gram), 21.74 acid equivalents/kg for NO<sub>x</sub>, expressed as NO<sub>2</sub>, (1/46 acid equivalents/g) and 58.82 acid equivalents/kg for NH<sub>3</sub> (1/17 acid equivalents/gram). Emissions of tropospheric ozone precursors have been measured by means of the reduction potential of tropospheric ozone (expressed as NMVOCs equivalent). For the weighing, the factors used were: 1.22 for NO<sub>x</sub>, 1.00 for NMVOCs, and 0.11 for CO and 0.014 for CH<sub>4</sub>.

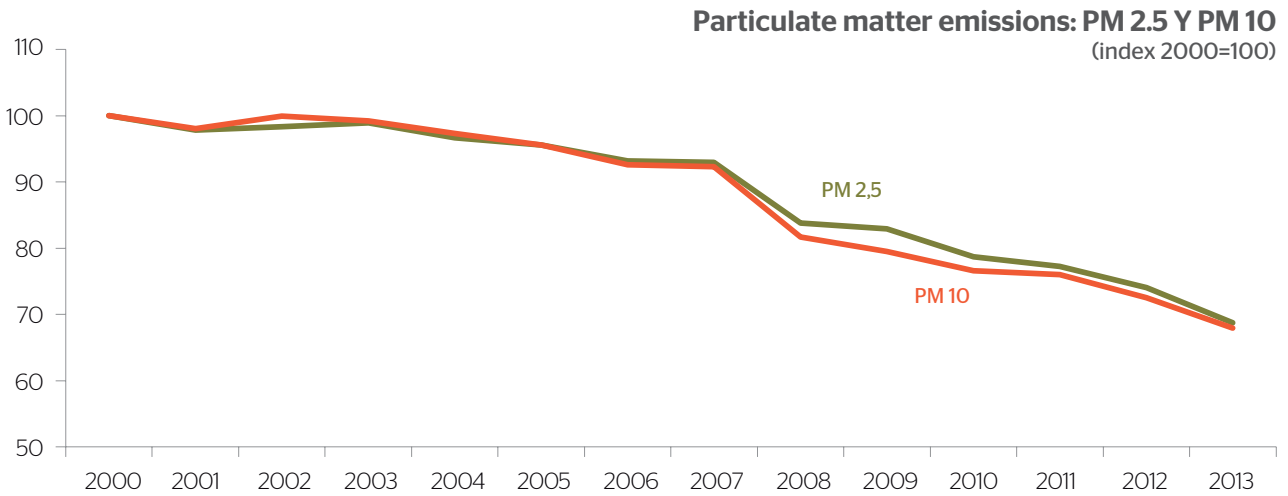
#### Source:

Ministry of Agriculture, Food and the Environment, 2015. Inventory of Emissions within the Framework of the Geneva Convention on Transboundary Air Pollution (CLRTAP-UNECE). Directorate-General for Environmental Quality and Assessment and Natural Environment. MAGRAMA.

#### Recommended Websites:

- <http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/sistema-espanol-de-inventario-sei/>
- <http://ec.europa.eu/environment/air/pollutants/ceilings.htm>

## Particulate matter emissions



Source: MAGRAMA

The emission of particulate matter in Spain has decreased by more than 32% during the period 2000-2013

PM10 decreased by 32.7% and PM2.5 decreased by 32.2%

In 2012, Spain, within the EU-28, contributed 9.2% of the total of PM10 emissions and 10.9% of PM2.5 emissions

Emissions of primary particulates fell in Spain by more than 32% between 2000 and 2013. In particular, those with a diameter under 10 microns (PM10) decreased by 32.7%, whereas those under 2.5 microns (PM2.5) decreased by 32.2%.

For both particulate sizes, the downward trend started in 2002 and there is a virtually constant annual reduction. Between 2007 and 2008 alone, the reduction was much sharper. In the last year, PM10 emissions decreased by 6.3% with a total of 94,855 t. Likewise, PM2.5 emissions in 2013 decreased by 7.1% amounting to 66,740 t.

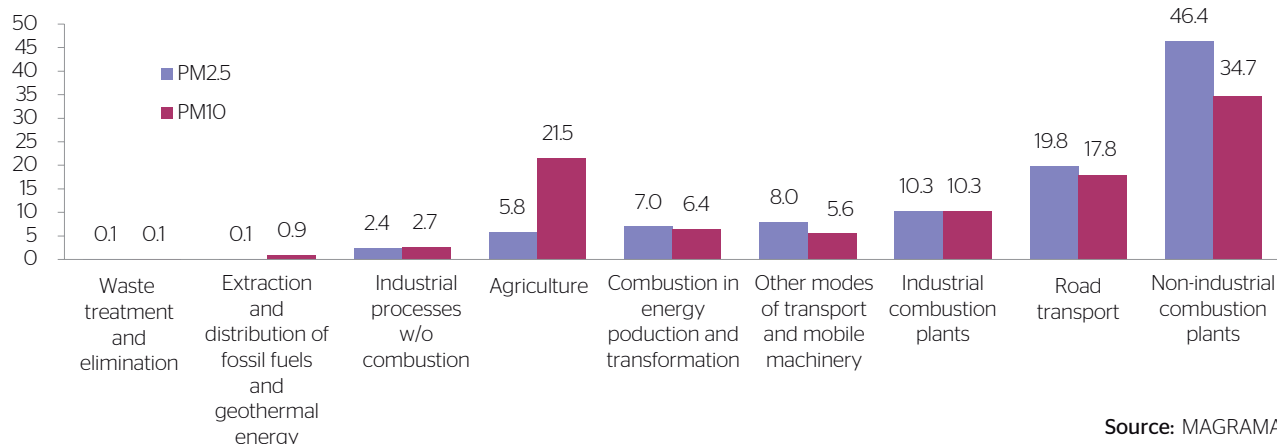
In 2013, non-industrial combustion plants were the main source for the emission of particulates, even exceeding the total emissions of transportation obtained by adding the ones corresponding to road transport to the ones arising from other transportation means and mobile machinery. In total, they were responsible for 46.4% of PM2.5 emissions and 34.7% of PM10 emissions. The sector with the second highest contribution to the emission of PM2.5 was road transport, responsible for almost 20% of emissions, while in the case of PM10 it was agriculture (with more than 20%), followed, in third place, by road transport (with almost 18% of the contribution). Transport is still one of the main sources of the emission of this pollutant.

According to data published by Eurostat, Spain was the fourth country in 2012 as regards emission of PM10 with 9.2% of all EU-28 emissions. Regarding PM2.5, it ranked second, with 10.9% of total emissions. For the European Environment Agency, the decrease in emissions of particulate matter occurring in most countries is mainly due to the change in fuel from carbon to natural gas for the generation of power as well as improvements in the performance of equipment for the reduction of pollutants in industrial facilities.





**Distribution of particulate matter emissions by sector, 2013 (%)**



Source: MAGRAMA

#### Definition of the Indicator:

The indicator shows the emissions of primary particulates in suspension with an aerodynamic diameter under or equal to 10 and 2.5  $\mu\text{m}$  (PM10 and PM2.5). They are expressed as index (2000=100).

#### Methodological Notes:

- The calculation of emissions does not include those from international air and sea traffic (international bunker).
- The EU has established specific emission limits for primary particulates, although there were national ceilings for its precursors in 2010 ( $\text{NO}_x$ ,  $\text{SO}_x$  and  $\text{NH}_3$ ), in accordance with the provisions of the Directive on National Emission Ceilings (Directive 2001/81/EC) and the Gothenburg Protocol of the Convention on Long-Range Transboundary Air Pollution (Decision of the Council 81/462/ECC of 11 June 1981). The review of the Directive foresees the inclusion of new emission commitments for 2020 and 2030, including those related to PM2.5.
- The presence of particulate matter in the atmosphere is one of the main causes of air pollution. Particulates are one of the most dangerous pollutants for human health. They can have a primary origin, when emitted directly to the atmosphere by humans (associated with road traffic and certain industrial and combustion processes) and natural, as dust, soil particulates, marine sprays, spores and pollens. They can also have a secondary origin, when they are generated in the atmosphere as a result of chemical reactions from precursor gases ( $\text{SO}_2$ ,  $\text{NO}_x$ ,  $\text{NH}_3$  and NMVOCs).

#### Source:

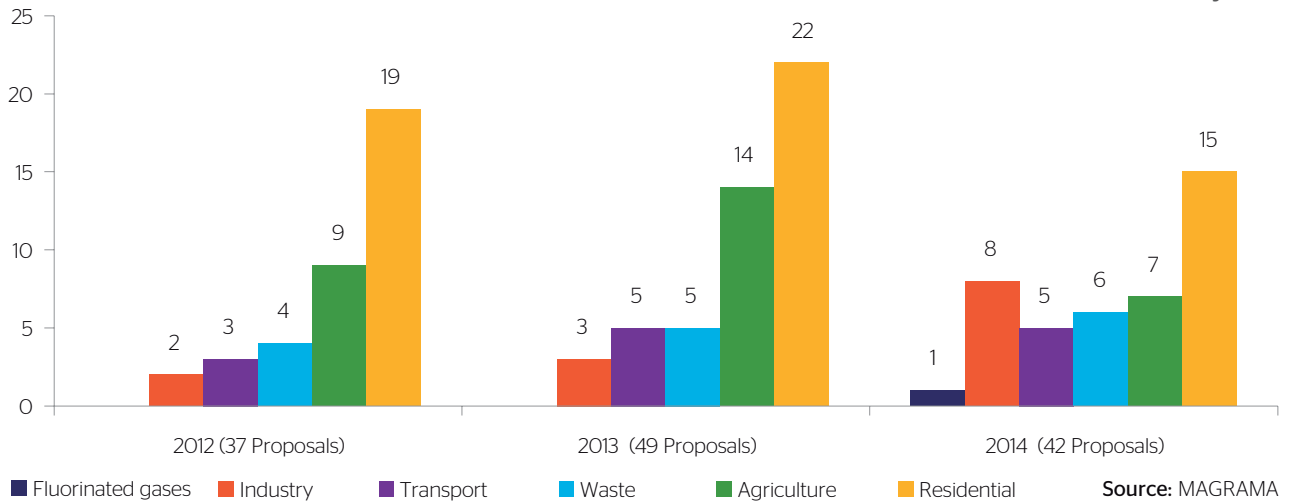
Ministry of Agriculture, Food and the Environment, 2015. Inventory of Emissions within the Framework of the Geneva Convention on Transboundary Air Pollution (CLRTAP-UNECE). Directorate-General for Environmental Quality and Assessment and Natural Environment. MAGRAMA.

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- <http://www.magrama.gob.es/calidad-y-evaluacion-ambiental/temas/sistema-espanol-de-inventario-sei/>
- <http://cdreionet.europa.eu/es>
- <http://www.eea.europa.eu/data-and-maps/indicators/emissions-of-primary-particles-and-5/assessment-3>

## Spanish Carbon Fund 'Clima Projects'

Sectoral distribution of the number of contracts of selected 'Clima Projects'

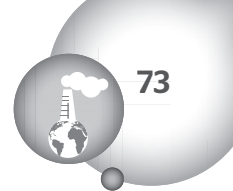


In 2014, 42 'Clima Projects' were approved. These are to be added to 37 projects in 2012 and 49 in 2013

During the 2014 Call the Ministry of Agriculture, Food and the Environment approved 42 new "Spanish Carbon Fund 'Clima Projects'". Their purpose is to reduce emissions in sectors such as agriculture, transport, housing, industry and waste. In the 2014 editions, the sector of fluorinated gases was also included for the first time.

Thanks to the implementation of the 42 new projects, Spain will prevent the emission of 1 million tonnes of CO<sub>2</sub> to the atmosphere from diffuse sectors, which gets us closer to the 10% target established for 2020 on reduction of diffuse sector CO<sub>2</sub> emissions 10% in respect of 2005 emissions.

The proposals selected for the 2014 call showed a wide and balanced regional and sectoral distribution and they included all diffuse sectors distributed as follows: 15 projects corresponding to the residential, commercial and institutional sector; 8 to the industrial sector; 7 to the agricultural sector; 6 to the waste sector; 5 to the transport sector and 1 to the fluorinated gas sector.



'Clima Projects' may be considered examples of projects for the boosting of economic activity as they are projects which improve the job creation in sectors associated with the fight against climate change, allowing for the development of a sustainable economy which will create a low-carbon society.

In 2015, a budgetary provision for 'Clima Projects' of 15 million Euros is foreseen, a four-fold increase on the budget this initiative was allocated at the start.

The Spanish Carbon Fund 'Clima Projects' are designed as one of the tools for the reduction of CO<sub>2</sub> emissions and the implementation of the transformation path for the Spanish production system into a low-carbon model

#### Definition of the Indicator:

This indicator shows the number of contracts corresponding to the Spanish Carbon Fund 'Clima Projects' selected each year and their distribution by sector. It shows data for the editions developed so far, years 2012, 2013 and 2014.

#### Methodological Notes:

- The Spanish Carbon Fund 'Clima Projects' for a Sustainable Economy (FES-CO2) are projects aimed at the reduction of the emission of Greenhouse Gases (GHG) developed in Spain.
- 'Clima Projects' will be located in Spain and will be developed within the so-called "diffuse sectors" (which are not subject to the European emission trading scheme), such as transport, agriculture, housing, waste, etc. This scheme does not include the development of projects for the absorption of emissions by sinks.
- Reductions in emissions through FES-CO2 will require compliance with a set of requirements, among others, those established by virtue of Article 7 of Royal Decree 1494/2011, of 24 October, governing the Carbon Fund for a Sustainable Economy.

#### Source:

Ministry of Agriculture, Food and the Environment, 2015. List of Selected Climate Projects. Call 2014. On the website: Magrama / Climate Change / 'Clima Projects' / Calls and selected projects / Call 2014

#### Recommended Websites:

- <http://www.magrama.gob.es/es/cambio-climatico/temas/proyectos-clima/>
- [http://www.magrama.gob.es/es/cambio-climatico/temas/proyectos-clima/Convocatoria\\_PROYECTOS\\_CLIMA\\_2014\\_tcm7-362150.pdf](http://www.magrama.gob.es/es/cambio-climatico/temas/proyectos-clima/Convocatoria_PROYECTOS_CLIMA_2014_tcm7-362150.pdf)

## Spanish registry of carbon footprint, offsetting and CO<sub>2</sub> removal

### Carbon footprints by sector up to 2014

| Activity sector  | No.       | %            |
|--|-----------|--------------|
| C. Manufacturing Industry  | 17        | 22.0         |
| M. Professional, scientific and technical activities                         | 12        | 15.6         |
| I. Hospitality   | 10        | 13.0         |
| H. Transport and Storage   | 8         | 10.4         |
| F. Construction  | 6         | 7.8          |
| Q. Health-related activities and social services                             | 6         | 7.8          |
| E. Water supply, sanitation activities, waste management and decontamination | 4         | 5.2          |
| P. Education   | 3         | 3.9          |
| O. Public Administration and defence; compulsory Social Security             | 3         | 3.9          |
| G. Wholesale and retail commerce; repair of motor vehicles and motorcycles   | 2         | 2.6          |
| D. Supply of electric power, gas, steam and air conditioning                 | 1         | 1.3          |
| J. Information and communications  | 1         | 1.3          |
| S. Other services  | 1         | 1.3          |
| L. Real estate activities  | 1         | 1.3          |
| K. Financial and insurance-related activities                                | 1         | 1.3          |
| R. Artistic, recreational and leisure-related activities                     | 1         | 1.3          |
| <b>Total</b>   | <b>77</b> | <b>100.0</b> |

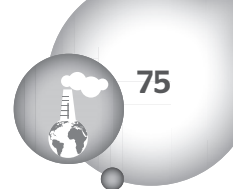
Carbon footprint allows for the quantification of greenhouse effect gases which are released into the atmosphere as a consequence of a certain activities, whether such activity is necessary for the manufacturing of products, the provision of services or the operation of organizations.

The Register implemented in 2014 and comprised of three sections, include carbon footprints of organizations, absorption projects located in Spain and carbon footprint compensations which are carried out by the former through the latter.

Regarding Section “**Carbon Footprint and Reduction Commitments**” of the Register, as of 31 December 2014, 62 organization had registered a total number of 77 carbon footprints. 10% of them had registered more than one footprint. Only four sectors (manufacturing industry, professional, scientific and technical activities, Hospitality and Transportation and storage) include more than 60 % of all footprints. These first three sectors alone account for half of the registrations completed. Regarding the geographical distribution of registrations, Madrid was, with 34 out of 77 carbon footprints registered, the region with the highest number of organizations in 2014. Castilla y León, which registered fourteen and the Basque Country, with eight, were also among the most active. Organizations from the Autonomous Communities of Catalonia, Navarra, the Balearic Islands, Murcia, Galicia, the Canary Islands, Extremadura, Comunidad Valenciana, Aragón and Andalusia also took part in the Register.

In 2014, and in just eight months, 77 carbon footprints were registered in Spain.

Four sectors alone accounted for more than 60% of the total “carbon footprints” registered.



Section “**Projects for the absorption of carbon dioxide**” of the Register, includes in 2014 three absorption projects, although two of them are part of the same initiative and are developed consecutively.

Finally, there were no new entries for the Section “**Compensation of Carbon Footprint**” of the Register in 2014. This situation was to be expected since during the first months after its creation new registrations focused mainly on carbon footprints and absorption projects.

In 2014, three projects for the absorption of carbon dioxide were implemented and no project for the compensation of the carbon footprint.

#### Definition of the Indicator:

The indicator shows the number of carbon footprints of absorption and compensation projects registered annually in the Carbon Footprint Register, compensation and absorption projects of carbon dioxide. Both the total number of entries is included as well as the number of entries of carbon footprints by activity sector.

#### Methodological Notes:

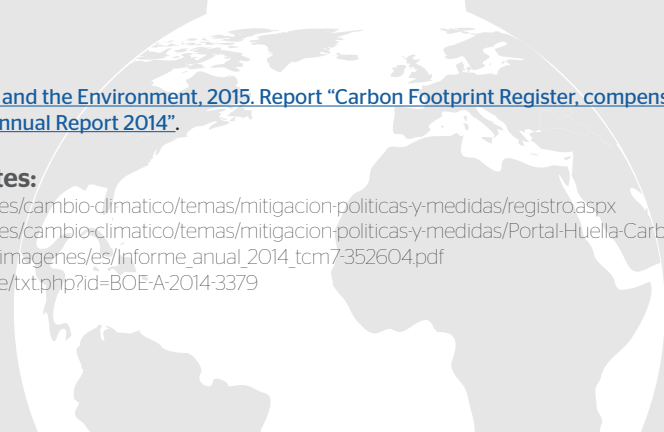
- On 29 May 2014, Royal Decree 163/2014, of 14 March, for the creation of the Carbon Footprint Register, compensation and absorption projects of carbon dioxide entered into force. The inclusion in the Register is optional and it is aimed at promoting the calculation and reduction of carbon footprint on the part of Spanish organisations, as well as for the promotion of projects which improve Spain's sink capacity; therefore, its implementation is a horizontal measure against climate change.
- The Register is divided into three sections:
  - Section for carbon footprint and commitments for the reduction of greenhouse gas emissions: for those organizations which voluntary calculate their carbon footprint and establish a reduction plan.
  - Section for carbon dioxide absorption projects: for agroforestry sink projects which allow for the compensation of the carbon footprint of those organizations registered with the previous section.
  - Section of the compensation of the carbon footprint in which the compensations completed are registered so that they can receive institutional support.
- Royal Decree 163/2014, for the creation of the Carbon Footprint Register, compensation and absorption projects of carbon dioxide establishes in Article 4.3 that the Spanish Office of Climate Change will publish annually a summary report on the state of the registrations and other relevant information regarding the register.
- Carbon footprints are registered annually. Companies may register carbon footprints for two or three years by means of the same documents; therefore, the existing carbon footprints of a certain year may be higher than the total number of registering companies.

#### Source:

[Ministry of Agriculture, Food and the Environment, 2015. Report “Carbon Footprint Register, compensation and absorption projects of carbon dioxide. Annual Report 2014”.](#)

#### Recommended Websites:

- <http://www.magrama.gob.es/es/cambio-climatico/temas/mitigacion-politicas-y-medidas/registro.aspx>
- <http://www.magrama.gob.es/es/cambio-climatico/temas/mitigacion-politicas-y-medidas/Portal-Huella-Carbono.aspx>
- [http://www.magrama.gob.es/imagenes/es/Informe\\_anual\\_2014\\_tcm7-352604.pdf](http://www.magrama.gob.es/imagenes/es/Informe_anual_2014_tcm7-352604.pdf)
- [https://www.boe.es/diario\\_boe/txt.php?id=BOE-A-2014-3379](https://www.boe.es/diario_boe/txt.php?id=BOE-A-2014-3379)





# WATER 2.4

Spain has been a pioneering country in the management of water basins, as established in the Water Framework Directive (2000/60/EC). After the approval in 2014 of the Hydrological Plans for the Tagus, Segura, Júcar and Ebro rivers by the respective agreements of the Council of Ministers, the hydrological planning process culminated in giving way to a monitoring and revision process in accordance with European and Spanish ordinance. With regard to protection of people and assets from floods, over the course of 2014, the preparation phase was completed for the Flood Risk Management Plans projects, in accordance with the Floods Directive (2007/60/EC). Both processes, review of hydrological planning and management of flood risks have seen a major milestone completed in water policy, once the process of public information was initiated in December for a period of six months.

Over the course of 2014, Spain, along with the European Commission, led the process of preparation of two guide documents with a European scope for the improvement of the implementation of the Water Framework Directive, on ecological flows and the Environmental and Economic Accounting System for water, advancing in the treatment of issues relating to water availability, so fundamental in our planning.

This edition of the Environmental Profile of Spain contains indicators that provide valuable information on the development of hydrological and flood plans, in addition to allowing adequate management of the public hydraulic domain:

- In relation to guaranteeing the supply, both in terms of quantity and quality: “Water Consumption” and “Reservoir Water Levels”.
- On managing demand, encompassing the efficient use of water: “Water Consumption”.
- In relation to quality control of water: “Organic Pollution of Rivers” and “The Quality of Inland Bathing Water”.
- To promote the adaptation of the systems to climate change and associated water needs in relation to drought and floods: “Fatalities due to Natural Disasters” and “Drought periods”.



### Water consumption

- In Spain, between 2004 and -2012, consumption of water from the public supply network has decreased by 17.4%. The greatest contributors to this reduction were the productive sectors (26.7%), while homes, municipal consumption and others have reduced usage by 14.5% in each case.
- Average water consumption in 2012 was 137 litres per inhabitant per day, 17.5% less than in 2005.

### Reservoir water levels

- For the hydrological year 2013/2014 the total peninsular hydrological reserves represented 63% of the reservoir capacity, a percentage greater than the average for the last 5 and 10 years.

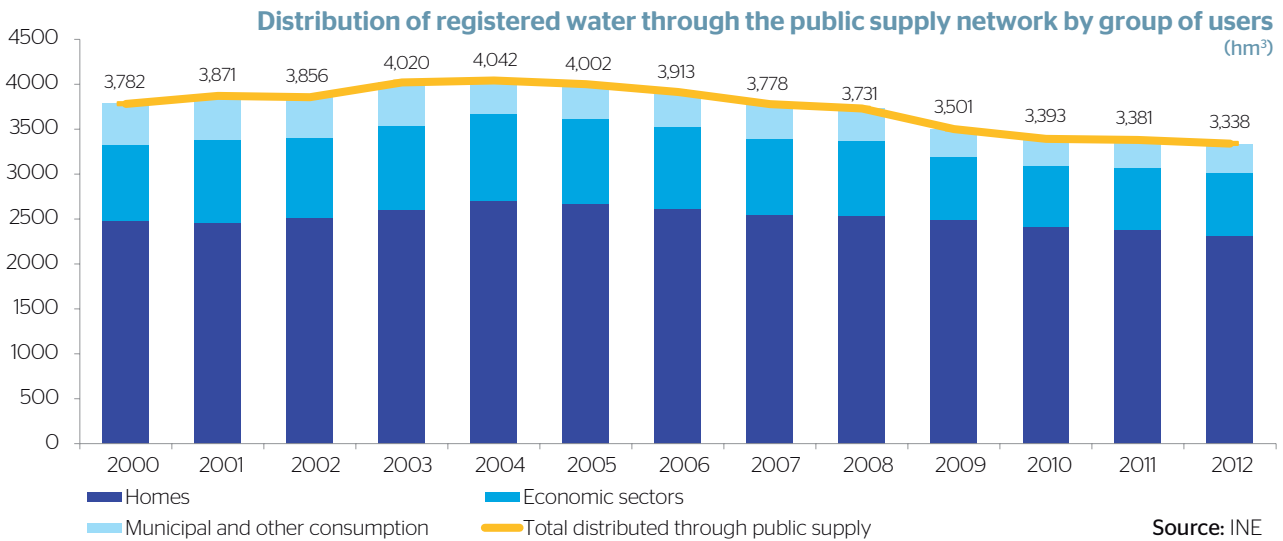
### Organic pollution of rivers

- An improvement was recorded in sampling points with lower concentration of BDO5, a parameter which contributes to the evaluation of the water quality of Spanish rivers.
- In 2014, almost 91% of sampling points offered very low concentrations of DBO5.
- In terms of ammonium, the percentage of points with intermediate concentration values has grown in recent years. Those with higher concentration maintain a downward trend equal to those with lower concentration.

### Quality of inland bathing water

- With an average of just 85 days, the 2014 bathing season was the shortest for continental waters since 2006.
- 56% of sampling points from continental bathing zones presented excellent levels of quality.

## Water consumption



In the period 2004-2012, consumption of water from the public supply network fell by 17.4%. The greatest contributors to this reduction were the productive sectors (26.7%), while homes, municipal consumption and others have reduced usage by 14.5% in each case

Average water consumption in 2012 was 137 litres per inhabitant per day, 17.5% less than in 2005

The Survey on the Supply and Sanitation of Water corresponding to the year 2012, prepared by the INE, compiles information on water consumption by sectors and estimates consumption per inhabitant. During the year 2012, the public urban supply networks were supplied with 4,485 cubic hectometres (hm<sup>3</sup>) of water. Three quarters of this quantity (3,338 hm<sup>3</sup>) were measured by users' meters and is considered to be registered.

The remaining 1,147 hm<sup>3</sup> were included under "volume of unregistered water" (estimated using gauges or not measured). Not included is water used in irrigation agriculture which reached 15,832 hm<sup>3</sup> (3.1% less than in the year 2011 when the sector used 16,344 hm<sup>3</sup>). Of this total of registered water, the amount distributed to homes was 2,309 hm<sup>3</sup> (69.2% of the total). Economic sectors used 711 hm<sup>3</sup> (21.3%), while municipal consumption (irrigation of gardens, street cleaning and other uses) reached 318 hm<sup>3</sup> (9.5%).

Since the year 2004, a decrease in registered water consumption has been recorded which reached 17.4% in 2012. This reduction occurred, above all, in the economic sectors (26.7%), while for domestic and municipal consumption the reduction was less, just 14.5% in each case.

The average domestic consumption per person (calculated using the quotient between the total volume of water registered and distributed to homes and the resident population) was, in 2012, 137 litres per inhabitant per day, some 17.5% less than in 2005, the year in which the reduction in water consumption per inhabitant began to fall, motivated mainly by the water saving awareness campaigns. In 2012, consumption was reduced by 3.5% in respect of 2011.



| Average water consumption per inhabitant per day |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|
|  | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| Litres/inhabitant                                | 168  | 165  | 164  | 167  | 171  | 166  | 160  | 157  | 154  | 149  | 144  | 142  | 137  |
| % Change   |      | -1.8 | -0.6 | 1.8  | 2.4  | -2.9 | -3.6 | -1.9 | -1.9 | -3.2 | -3.4 | -1.4 | -3.5 |

Source: INE



In respect of 2011, domestic water consumption fell by 3.1%, for the economic sectors it grew by 2.6% and municipal use grew by 4.6%.

Unregistered water is disaggregated in real and apparent losses. Real losses (leaks, breaks and breakdowns in the supply network) were estimated in 2012 at 711 hm<sup>3</sup> (15.9% of the total water supplied in the public networks) while apparent losses (errors in measurement, fraud and estimated consumption) for this year accounted for 436 hm<sup>3</sup> (9.7%).

#### Definition of the Indicator:

The indicator presents the annual volume of registered water for groups of users: homes, economic sectors (industry, services and livestock) and municipal consumption (irrigation of gardens, street cleaning and other uses).

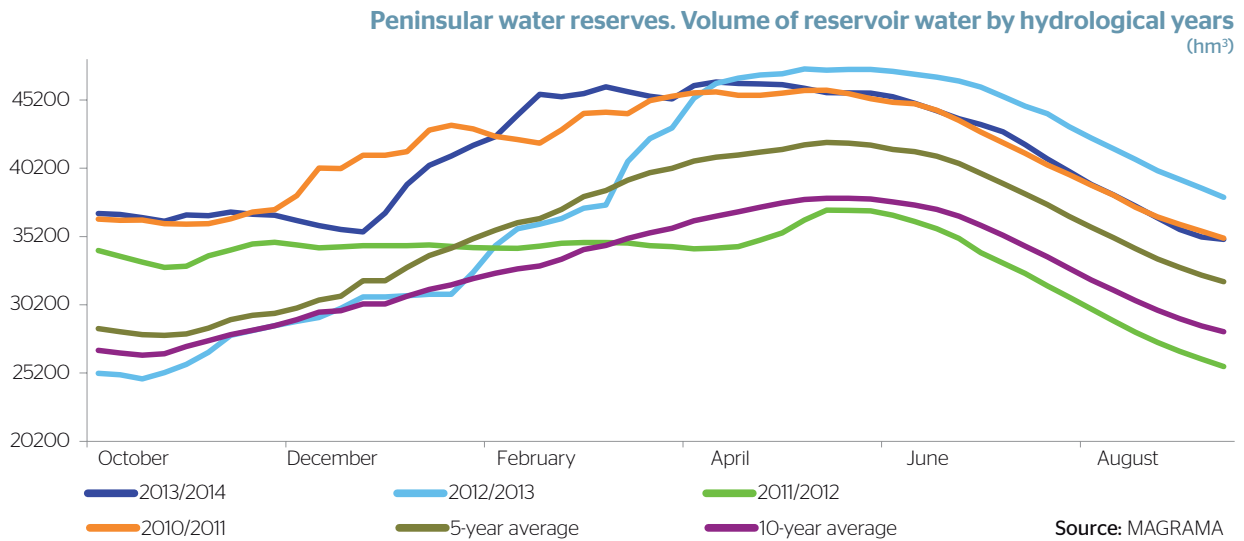
#### Source:

National Institute of Statistics (INE): Water supply and sanitation statistics (various years). Information on the website: INEbase / Agriculture and Environment / Water / Water supply and sanitation statistics / Results / Water indicators / Series 2004-2012 / 1.1 Indicators for water supply by community and Autonomous Community.

#### Recommended websites:

[http://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica\\_P&cid=1254735976602](http://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica_P&cid=1254735976602)

## Reservoir water levels



For the hydrological year 2013/2014 the total peninsular hydrological reserves represented 63% of the reservoir capacity, a percentage greater than the average for the last 5 and 10 years

In early October 2014 (soon after the end of the 2013-2014 hydrological year), the peninsula's total hydrological reserves represented 62.7% of reservoir capacity, a percentage above the average figures for the last 5 and 10 years, which were 56.3% and 50.54% respectively. Looking at the peninsula, Spain had a total reservoir capacity of 55,977 hm<sup>3</sup> on 7 October 2014, with 75.3% of which belonged to the Atlantic and the remainder 24.7% to the Mediterranean. In relation to the above, water reserves presented more regular patterns over the course of the year, with more homogeneous levels due to patterns in precipitation and demand.

The study of the quantification of the volume of water stored in the form of snow, along with forecasts of its evolution is carried out within the framework of the Assessment of Water Resources derived from Snowmelt (EHRIN) programme. The objective is to ascertain the availability of hydraulic resources and be able to implement optimum management of reservoirs based downstream, both in ordinary situations where the main aim is to ensure supply and ecological flows, such as in extreme circumstances of flood and drought. Moreover, the programme allows for monitoring and analysis to be performed for Spanish glaciers. These formations are considered to be of great relevance as singular environmental elements that allow for the monitoring of climatological changes that are occurring, albeit if they do not represent an important hydraulic resource as snowmelt.

| Capacity (hm <sup>3</sup> ) and reserves (%) of peninsular reservoirs<br>(Data as of 7 October 2013) |   |                             |   |             |             |                |                 |
|--|---|-----------------------------|---|-------------|-------------|----------------|-----------------|
| Watersheds   | Total reservoir capacity (hm <sup>3</sup> ) | Reserves (hm <sup>3</sup> ) | Reserves compared to total capacity (%) |             |             |                |                 |
|  |   |                             | 2013                                    | 2012        | 2011        | 5-year Average | 10-year Average |
| Atlantic Watershed   | 42,134                                      | 27,092                      | 64.3                                    | 67.6        | 48.1        | 58.2           | 52.7            |
| Mediterranean Watershed  | 13,843                                      | 7,982                       | 57.7                                    | 63.8        | 37.6        | 50.5           | 43.4            |
| <b>PENINSULAR TOTAL</b>  | <b>55,977</b>                               | <b>35,074</b>               | <b>62.7</b>                             | <b>66.6</b> | <b>45.4</b> | <b>56.3</b>    | <b>50.4</b>     |

Source: MAGRAMA

On the other hand, closely linked with reservoir water levels, the National Drought Observatory of MAGRAMA offers information on water drought, complementing information on meteorological drought developed in the chapter on “Natural Disasters and Technology” included in this publication.

#### Definition of the Indicator:

Water reserves in peninsular reservoirs. Offers overall information for watersheds (Mediterranean and Atlantic).

#### Methodological Notes:

- The hydrological year runs from 1 October to 30 September of the following year.
- The Hydrological Information division of the MAGRAMA receives the data generated by the relevant River Basin Authority, in other Cross-Regional Water Administrations, in the Spanish State Meteorological Agency, as well as those supplied by Red Eléctrica de España. It uses this information to conduct follow-up analysis to establish real-time water levels and access real information on the volumes stored in all reservoirs with a capacity greater than 5 hm<sup>3</sup>, on the status to systems of exploitation, on reserves devoted to irrigation activities and supply to populations, flow rates at the major rivers of each basin, rainfall data and information on stored hydroelectric power (estimated) as well as the electric power actually generated.

#### Source:

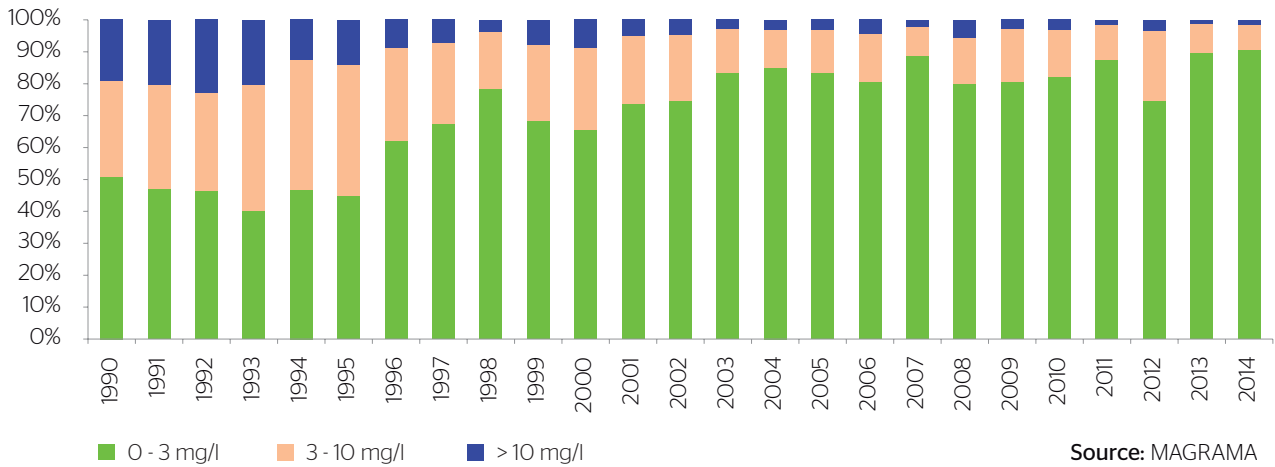
Hydrological Gazette. Directorate General for Water. Ministry of Agriculture, Food and the Environment. Information on the website: MAGRAMA / Areas of Activity / Water / Assessment of water resources / Hydrological Gazette

#### Recommended Websites:

- <http://portal.magrama.gob.es/BoleHWeb/>
- <http://www.magrama.gob.es/es/agua/temas/evaluacion-de-los-recursos-hidricos/>
- <http://www.magrama.gob.es/es/agua/temas/observatorio-nacional-de-la-sequia/>

## Organic pollution of rivers

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



An improvement was recorded in sampling points with lower concentration of BOD5, a parameter which contributes to the assessment of the water quality of Spanish rivers

In 2014 almost 91% of sample points offered a very low concentration of BOD5

In terms of ammonium, the percentage of points with intermediate concentration values has grown in recent years. Those with higher concentration maintain a downward trend equal to those with lower concentration

2014 saw another improvement recorded in the level of organic pollution in the waters of Spanish rivers, with 90.7% of the samples points showing Biochemical Oxygen Demand in 5 Days (BOD5) of between 0 and 3 mg/l. This exceeds the threshold of 90% and maintains the positive trend of previous years in which an increase in the points with lower concentration of BOD and a drop in the points with higher values for this concentration is shown.

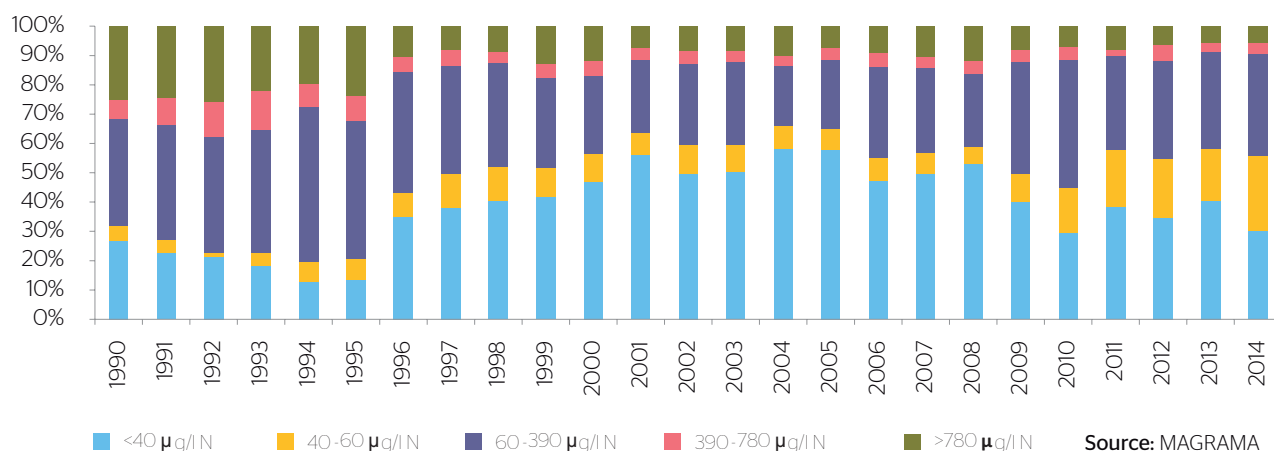
It is to be highlighted that the year 2014 has also proven to be that in which the most sample points have been studied in recent years, which improves the assessment provided by these results. Thus, while in 2010 1,182 points were analysed, 1,328 sample points were taken in 2014, which represented an increase of 12.4% for those years.

Of all these sample points, in the year 2014, a total of 1,098 presented BOD5 of between 0-3 mg/l, 103 points estimated BOD5 of between 3-10 mg/l and 20 sample points offered a concentration of BOD5 of greater than 10 mg/l.

The trend in terms of ammonium concentration showed a more irregular pattern in recent years than in the case with BOD5. From the positive levels recorded in 2004, evidenced by 58% of the sample points showing concentration values for ammonium of less than 40 µg/l N, we have seen, in 2014, for example, the percentage of sample points showing this same range of concentration drop to 30.3%. For their part, the points with the highest concentration of ammonium (> 780 µg/l N) do show a downward trend and in recent years have represented less than 6% of the total sample points (5.7%).

Ranges of intermediate concentration of ammonium grouped between 40 and 390 (obtained by grouping together the 40-60 and 60-390 µg/l N categories) are those that have increased by the greatest measure, passing from 28.4% of the sample points in 2004 to 60.5% in 2014.

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



### Definition of the Indicator:

The indicator also reveals the percentage of control stations with an average value of ammonium between the following intervals: 0 to 3 mgO<sub>2</sub>/l, 3 to 10 mgO<sub>2</sub>/l and greater than 10 mgO<sub>2</sub>/l. The indicator also reveals the percentage of control stations with an average value of ammonium between the following intervals: <40 µg/l N, 40-60 µg/l N, 60-390 µg/l N, 390-780 µg/l N and >780 µg/l N.

### Methodological Notes:

- BOD is the quantity of oxygen dissolved in water needed for aerobic bacteria to oxidise all the biodegradable organic matter present in the water. Values of BOD<sub>5</sub> above 10 mgO<sub>2</sub>/l are typical of very polluted waters, whereas values below 3 mgO<sub>2</sub>/l indicate very low organic pollution.
- Annex VIII of the Water Framework Directive sets out an indicative list of the main pollutants including the substances having a negative effect on the oxygen balance (which can be measured using parameters such as Biochemical Oxygen Demand - BOD and Chemical Oxygen Demand - COD). Moreover, substances contributing to eutrophication are also collected (especially nitrates and phosphates).
- The ammonium ion (NH<sub>4</sub><sup>+</sup>) is the ionised form of ammonia (NH<sub>3</sub>). The ammonia present in the environment comes from metabolic, agricultural and industrial processes, and also from disinfection with chloramine. Ammonium, along with nitrates, constitutes one of the main sources of nitrogen input into water, making it responsible for the increase in eutrophication. Its origin is mainly the sanitation and purification networks.

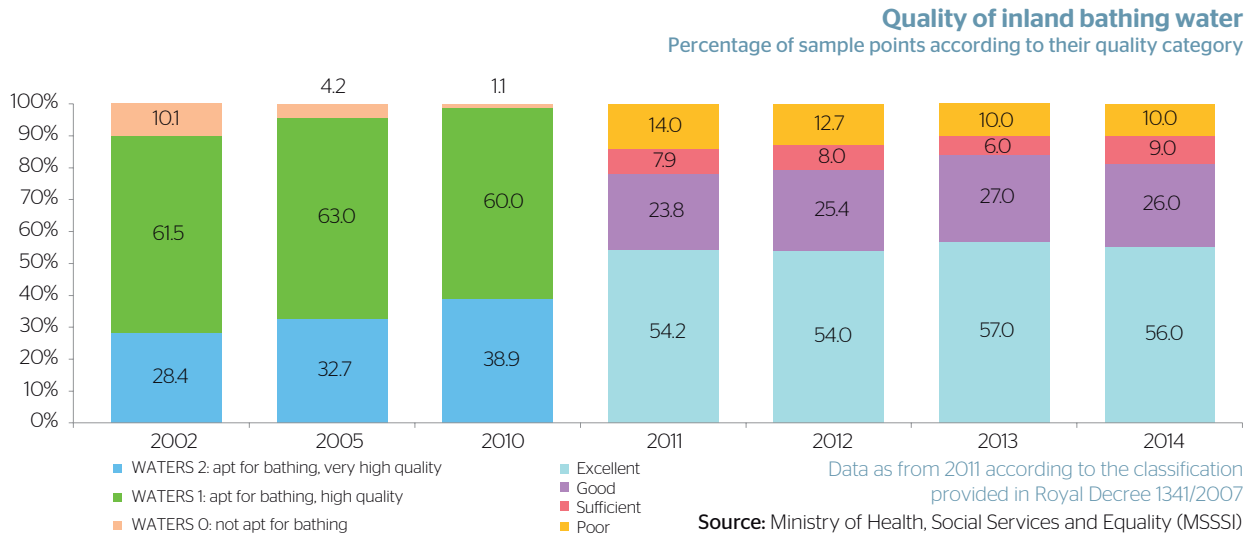
### Source:

Data provided by the Sub-directorate General of Comprehensive Management of the Hydraulic Public Domain. Directorate General for Water. Ministry of Agriculture, Food and the Environment.

### Recommended websites:

- <http://www.magrama.gob.es/es/agua/temas/estado-y-calidad-de-las-aguas>

## Quality of inland bathing water



With an average of just 85 days, the 2014 bathing season was the shortest for continental waters since 2006

According to the report "Quality of Bathing Water in Spain. Technical report. 2014 Season", the duration of the bathing season for continental waters was 85 on average in Spain in 2014. This is the shortest since 2006 and two days shorter than the previous year. Murcia had the longest season, at 138 days, and Navarre the shortest with just 48.

In comparison to 2013, 2014 offered a very similar level of quality for inland bathing water. The increase in the percentage of sample points of sufficient quality by three percentage points is noteworthy, at the cost of a drop of one percentage point in the excellent category and two points in the good quality category. The summary of the state of quality of inland bathing water for 2014 is presented in the following table.

56% of sampling points from continental bathing zones presented excellent levels of quality

| Quality of Inland Bathing Water. Year 2014              |      |            |      |
|---|------|------------|------|
| Sampling points according to their quality category (%) |      |            |      |
| Excellent   | Good | Sufficient | Poor |
| 56  | 26   | 9          | 10   |

Source: MSSSI

Castilla-La Mancha, Catalonia, Comunidad Valenciana, Madrid, Navarre and the Basque Country all attained in 2014 excellent quality for more than half of their sample points. Comunidad Valenciana and the Basque Country in particular stand out with 100% of their sample points awarded the maximum quality.

The European Environment Agency report "Bathing Water Quality 2014" (Report 1/2015) describes how the percentage of inland bathing waters with excellent quality continues to rise. In fact, it represented less than 40% in 1995, while in 1998 it exceeded 60%. From this year, the improvement has been maintained at a more or less steady rate up to 2010, the year in which the increase was most noticeable with a rise of almost 18 percentage points in this short period (2010-2014).

Spain is seventh in the EU in terms of the number of sample points and represents 3.6% of the total. Germany almost 30% and France 20%.

### Definition of the Indicator:

The indicator presents the percentage of the total sample points of continental or inland bathing waters included annually in each of the quality ranges established by legislation, since 2011 there are four: "Poor" quality, "Sufficient" quality, "Good" quality and "Excellent" quality.

### Methodological Notes:

- Directive 2006/7/EC governs quality management of bathing waters inside the European Union. In Spain, this aspect is regulated through the transposition of this directive into the Spanish legal framework by virtue of Royal Decree 1341/2007.
- Both the Directive and the Royal Decree classify the quality of bathing water as: "Poor" quality waters; "Sufficient" quality waters, "Good" quality waters and "Excellent" quality waters.
- In Spain, in the year 2014, 1,893 areas of bathing water were included. Of them, 223 were continental and 1,670 were marine. Of the 2,178 sample points taken during the 2014 season, 236 were from continental waters and 1,942 from marine waters.
- In 2014 only two sample points have been closed, giving a total of 234 sample points of which results have been obtained for the 236 registered.
- The report "*Quality of Bathing Water in Spain Technical report. 2014 Season*", prepared by the Ministry of Health, Social Services and Equality analyses in-depth the quality of waters, classifying the sample points into the four ranges established by the applicable legislation.

### Source:

Ministry of Health, Social Services and Equality, 2015. Quality of Bathing Water in Spain. Technical report. Season 2014. Information on the website: Citizens / Public Health / Environmental and Workplace Health / Water Quality / Bathing Water / Publications / Quality of Bathing Water in Spain. Year 2014.

### Recommended Websites:

- <http://www.msssi.gob.es/profesionales/saludPublica/saludAmbLaboral/calidadAguas/aguasBanno/publicaciones.htm>
- <http://www.eea.europa.eu/publications/european-bathing-water-quality-in-2014>



# LAND 2.5

Land is one of the most complex ecosystems in nature and it is also one of the most diverse habitats (it contains one fourth of the planet's biodiversity).

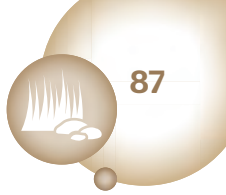
It is also a non-renewable resource which is subject to strong pressure due to intensification and use for agriculture, livestock farming, forestry and urbanization. When pressure arising from these activities is combined with unsustainable management practices and uses, which are associated with other economic activities such as industry and transport, for example, land degradation increases. Such degradation gets worse if external climatic events occur. According to FAO, "the conservation of the soil and the sustainable management of the land are now key elements for the reversion of the degradation trend of the soil and for the guaranteeing of food safety and a sustainable future".

The "Thematic Strategy for Soil Protection" is still pending approval by the EU. The different sectoral policies of the EU (agriculture, water, waste, chemicals, industry, etc.) consider indirectly, to a lesser or greater extent, soil protection; however, the fact that other targets are established does not guarantee a proper protection of soils. It must be taken into account that soils contribute to the fight and adaptation to climate change due to their key role in the carbon cycle and they also store and filter water, thus improving our resilience against floods and droughts.

In this sense, both the "Roadmap towards Resource Efficient Europe" as well as the "Seventh Environment Action Programme of the EU", two of the main pillars of the lines of policy action of the EU, include among its targets the implementation of a sustainable management of soil and land.

The 68<sup>th</sup> session of the General Assembly of the UN declared 2015 the International Year of Soils (IYS). The Food and Agriculture Organization of the United Nations is the body responsible for the implementation of the IYS 2015, in collaboration with the Government and the Secretary of the United Nations Convention to Combat Desertification.





### Distribution of artificial land in Spain

- Artificial land in Spain accounts for 3.95% of the total area.
- Spain is the second country in terms of area of the EU-27, accounting for 11.6% of the total area.
- Spain ranks fourteenth in terms of artificial land in the EU-27 and its percentage is below the European average, at 4.6%.

### Land occupation: area occupied by urban plots

- The area occupied by urban plots has decreased by almost 20% between 2006 and 2014.
- In 2014, 56.8% of the total urban area corresponded to built-up areas.
- 2014 was the first year in which there was a slight decrease in built-up areas -0.2%.

## Distribution of artificial land in Spain

Distribution of artificial land in Spain

|                                  | Area Total | Area artificial | Artificial built-up areas | Artificial non built-up areas |
|----------------------------------|------------|-----------------|---------------------------|-------------------------------|
| Area of Spain (km <sup>2</sup> ) | 498,511    | 19,691          | 6,268                     | 13,422                        |
| % in respect of total            | 100.00     | 3.95            | 1.26                      | 2.69                          |
| % in respect of EU-27            | 11.58      | 10.05           | 9.63                      | 10.25                         |

Source: Eurostat

Spain ranks fourteenth in terms of artificial land in the EU-27 and its percentage is below the European average, at 4.6%

Spain is the second country in terms of area of the EU-27, accounting for 11.6% of the total area

Spain ranks fourth in terms of artificial area in respect of the EU-27, with 10.1%

In 2012, Spain had an artificial area estimated by Eurostat at about 19,691 km<sup>2</sup>, which in relation to its total area (498,511 km<sup>2</sup>), accounts for 3.95% of the total area. Spain ranks fourteenth in terms of artificial land in the EU-27 and its percentage is below the European average at 4.6%.

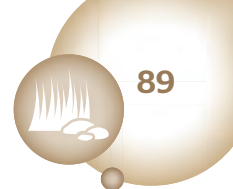
In terms of artificial built-up areas, it accounted for just 1.26% of the total area, whereas non built-up areas accounted for 2.69%.

These figures are truly meaningful when Spain is compared to the rest of the European countries, since Spain accounts for 11.6% of the total area of the EU-27 (the second largest country after France, which accounts for 12.6% and ahead of Sweden, which is third and accounts for 10.2%).

The artificial area of Spain accounts for 10.1% of the EU-27 total, ranking fourth after France (the artificial area of which accounts for 16.1% of the EU-27 total), Germany (14.0%) and Italy (12.0%).

The analysis of the contribution of the built-up areas to the EU-27 total shows a similar position in the ranking (Spain is the fourth country in terms of contribution), but with lower figures than those of the countries with the highest contributions. Germany offers the highest value (14.1%) followed by France (13.9%), Italy (12.6%) and Spain (9.6%).

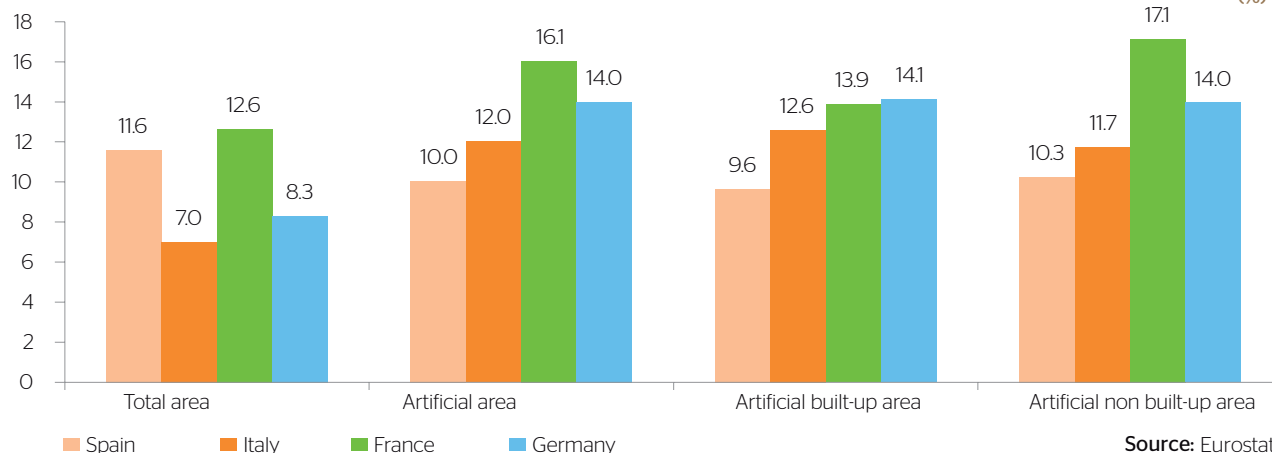
However, the artificial area in Spain has increased during the last few years. The urban development experienced in the years before the financial crisis contributed to the transformation of a large portion of the Spanish area into an artificial one. Most of that area corresponded to farming land which was more prone to transformation into artificial areas due to proximity to urban areas. Coastal areas have also suffered land artificialisation processes, in this case due to tourist development.



2.5

LAND

### Contribution to the total and artificial surface of the EU 27 Four countries of greatest contribution, 2012 (%)



#### Definition of the Indicator:

The indicator shows the area occupied by artificial soil in Spain within the framework of the information obtained by Eurostat for the EU-27, stating which areas correspond to built-up areas to non built-up areas. Artificial areas are those characterised by an artificial surface and often waterproof, such as that of constructions and pavements. Likewise, built-up areas refer to those areas occupied by roofed buildings constructed for permanent purposes and in which people can dwell or people can enter to make use of them. Non built-up areas refer to those areas which have not undergone urban development processes characterised by the fact that they are made up of a waterproof artificial surface of hard materials.

#### Methodological Notes:

- These data refer to 2012 and are not compared to data from previous years. This means that only geographic comparisons within the same year can be made. This is due, among other reasons, to the changes in the area studied and the changes introduced in the classification corresponding to 2012.
- LUCAS is the acronym for **Land Use and Cover Area frame Survey**. The objective of the survey is to gather harmonised information on the cover and use of the land. This surveys also provides territorial information for a better analysis of the interactions between agriculture, the environment and land management. Since 2006, Eurostat have carried out LUCAS surveys every three years; the survey of the year 2006 was considered a pilot survey and it has not been used for estimate purposes. The most recent surveys were conducted in 2009 and 2012. The classification of the 2012 survey includes 33 total classes, divided into 14 main classes.
- The LUCAS survey is part of the Community Statistical Programme 2008-2012.

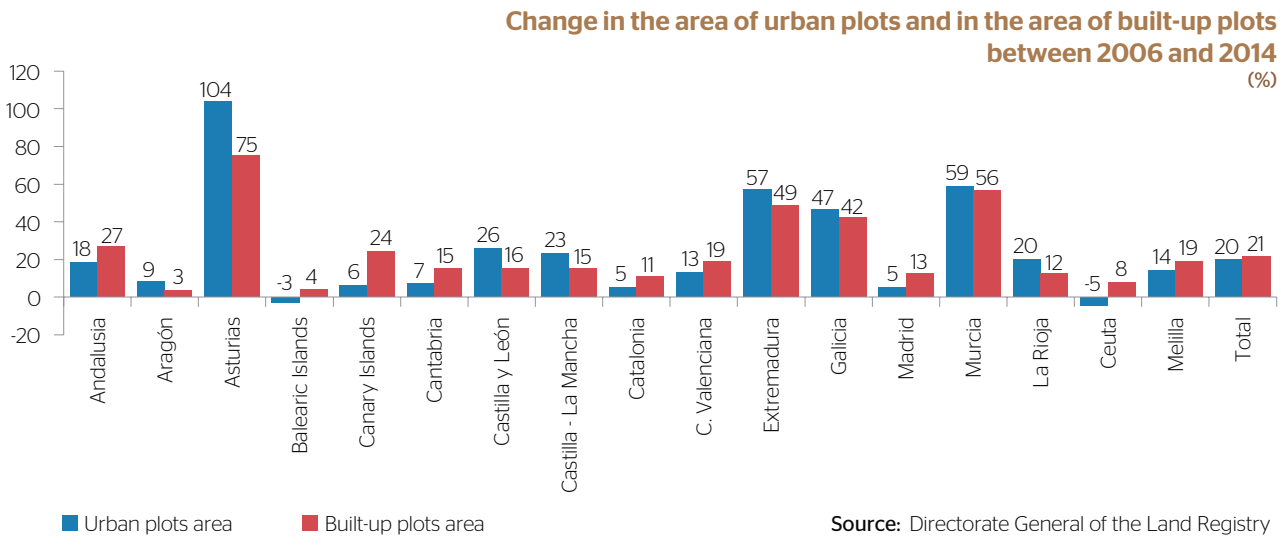
#### Source:

[Eurostat. Information on the website: Data. Database. Database by themes. General and regional statistics. Land cover \(Land lcv\). Land covered by artificial \(lan lcv art\)](#)

#### Recommended Websites:

- [http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lan\\_lcv\\_art&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lan_lcv_art&lang=en)
- <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ.L:2007:344:0015:0043:ES.PDF>

## Land occupation: area occupied by urban plots



In 2014, 56.8% of the total urban area corresponded to built-up areas

The area occupied by urban plots has decreased by almost 20% between 2006 and 2014

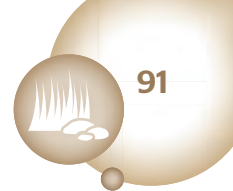
2014 was the first year in which there was a slight decrease in built-up areas (-0.2%)

The area covered by urban plots in Spain in 2014 occupied a total of 1,135,985.5 ha. Regarding this area, 56.8% (645,011.3 ha) corresponded to built-up areas, while the remaining 43.2% (490,974.2 ha) corresponded to non built-up areas.

During the period 2006-2014, the area covered by urban plots increased by 19.9% whereas that covered by built-up urban plots increased slightly more, reaching 21.4%. On the other hand, non built-up urban plots increased by 18.1%.

Regarding the national total, the highest annual increase in the area covered by urban plots occurred between 2008 and 2009 when it increased by 5.6%. That may be due to the fact that, even though the financial crisis had already started, the momentum of the real estate development gave rise to an expansion in the registration of urban land. The rest of the years increases have been more moderate, with figures between 2% and 3%. Only between 2012 and 2013 there was an increase lower than the previous ones (1.4%). 2014 was the first year in which there was a decrease in the area covered by urban plots of -0.2%.

By Autonomous Community, the highest increases in area covered by urban plots were those of Asturias, Murcia and Extremadura.



2.5

LAND

### Total area of urban plots in Spain and variation in respect of previous year

|   | 2006    | 2007    | 2008    | 2009      | 2010      | 2011      | 2012      | 2013      | 2014      |
|---|---------|---------|---------|-----------|-----------|-----------|-----------|-----------|-----------|
| Area of urban plots (ha)                    | 947,124 | 967,688 | 993,882 | 1,049,925 | 1,073,858 | 1,098,777 | 1,123,134 | 1,138,311 | 1,135,985 |
| Variation with respect to previous year (%) |         | 2.2     | 2.7     | 5.6       | 2.3       | 2.3       | 2.2       | 1.4       | -0.2      |

Source: Directorate General of the Land Registry

#### Definition of the Indicator:

The indicator shows the variation of the area covered by urban plots and built-up plots registered in Spain for the preparation of the Real Estate Registry between years 2006 and 2014 expressed in %.

#### Methodological Notes:

- Within the scope of this indicator, data corresponding to the Basque Country and Navarra are excluded since they have their own Land Registry services. The survey of the year 2006 was considered a pilot survey and it has not been used for calculation purposes; the most recent purposes were conducted in 2009 and 2012. The classification of the 2012 survey includes 33 total classes, divided into 14 main classes.
- The Land Registry is an administrative registry attached to the Ministry of Finance and Public Administrations in which rural and urban real estate is described, as well as real estate with special characteristics (Royal Legislative Decree 1/2004 of 5 March, approving the Recast Text of the Land Registry Act (TRLRHL, as per the Spanish Acronym)). The Land Registry Act is applied to all of the national territory, notwithstanding the provisions set out in the special regimes in force in the Basque Country and Navarra.

#### Source:

Directorate General of the Land Registry. Ministry of Finance and Public Administrations. Information on the website, on the Website of the General Directorate of the Land Registry: Land Registry: Home / Disclosure of Land Registry Information / Statistics / Land Registry / Urban

#### Recommended Websites:

- <http://www.catastromeh.es>
- [http://www.catastromeh.es/documentos/estadisticas\\_Metodologia\\_Catastro\\_2012.pdf](http://www.catastromeh.es/documentos/estadisticas_Metodologia_Catastro_2012.pdf)



## NATURE 2.6

Spain is home to a rich biodiversity, a broad variety of soils and climates that, sharing a chequered terrain and a complex bio-geographical history have, as a consequence, a great variety of species and ecosystems. Man has shaped part of this patchwork for a long time, modifying, moulding and exploiting the natural environment.

Act 42/2007, of 13 December on Natural Heritage and Biodiversity is inspired by the principles of the promotion of an organised use of resources to guarantee sustainable use of our natural heritage and the integration of the requirements of conservation, sustainable use, improvement and restoration of our natural heritage with sectoral policies.

For its part, the Sectoral Plan for Nature Tourism and Biodiversity, approved by means of Royal Decree 416/2014 of 6 June, "... focuses on the strengthening positive synergies related to the conservation of biodiversity and nature tourism, taking into account the competitive advantage that Spain's biodiversity is the most relevant in the European Union and that the tourism sector is one of the most important sectors in the Spanish economy".

In 1992 The United Nations Convention on Biodiversity recognised the importance of knowledge and traditional ways of life for the sustainable management of biodiversity and the conservation of the associated knowledge.

In this sense, Act 42/2007, complying with the commitment of the Convention on Biological Diversity, recognises the need to know, conserve and foster the knowledge and traditional practices of interest for biodiversity, as traditional practices can construct a key reference in the management of territory where they have been generated and developed.

The Ministry of Agriculture, Food and the Environment, aware of the value of compiling these traditional practices relating to Biodiversity and the urgent need to do so, has promoted the set up of the Spanish Inventory of Traditional Knowledge relating to Biodiversity. This inventory is focused on traditional knowledge relating to wild biodiversity in Spain (flora, fauna and ecosystems). Moreover, taking into consideration that established in Act 42/2007, the Inventory includes components of geo-diversity related to biological diversity.

Very much related to the objective of the conservation of biodiversity is the approval in 2014 of Act 30/2014 of 3 December on National Parks. Also, the Tablas de Daimiel National Park was extended by 1,102 hectares with the incorporation of adjoining complementary lands, making the Park's surface 3,030 ha.

### Protected areas

- In 2014 the protected land surface represented 31.9% of the total land area, while for marine territory the figure was 6.9%
- The land surface belonging to the Nature 2000 Network remained stable at around 27.2% of the total land surface
- Biosphere Reserves covered 9.5% of Spain's land surface after increases in recent years.
- At present the competent administrations are working on the implementation of the corresponding management plans and processes for the declaration of Special Areas of Conservation of the Natura Network

### Forest defoliation

- In 2014, the general condition of woodland presents some improvement on the previous year; 83.4% of the trees studied appeared healthy compared to 82.5% the previous year

### Bird population trends

- The samples, repeated at more than 25,000 spots, confirm the different responses to the indicator according to the environment in question
- The populations of forest and bush birds experienced increases in most seasons
- The population trends for agricultural and urban environments are experiencing a downward trend and present negative values for recent years

### Environmental Monitoring

- In 2014 the number of arrests for environmental crimes rose by 29.9%
- In the same year, the number of infractions fell by 3.7%

### Forest land and other forest formations

- Spain has more than 27.7 million hectares of mountain, of which more than 18 millions are forest. It is the second country in the EU in terms of forest coverage, after Sweden.
- In respect of forest coverage of the surface of Spain, it is the fourth country in the EU, with almost 55% of its territory. This percentage is only surpassed by Sweden and Finland (both with 69%) and Slovenia (63%).
- Spain has the third largest wooded area coverage of the EU with 18.8 million hectares, equivalent to 36.3% of the national territory.
- The treeless area is 9.3 million hectares which is equivalent to almost half of the European scrubland and grazing land (20.3 million hectares)

### Forest reproductive material

- In 2014 the number of source materials on the National Register increased by 48 units of approval
- The total number of accumulated units of approval increased to 7,938 in 2014

### Diversity of wild terrestrial species

- The Spanish Inventory of Terrestrial Species (IET, as per the Spanish acronym) includes a small section of terrestrial species (approximately 1.6%), mostly vertebrate
- Of the 738 species of wild land vertebrates included on the IET, 216 (29.3%) are considered endangered

## Protected areas

| Protected surface in Spain. Year 2014 |               |              |              |                |                              |              |
|---------------------------------------|---------------|--------------|--------------|----------------|------------------------------|--------------|
| Figure for Protection (ha)            | Land          |              | Marine       |                | Total surface Protected (ha) |              |
|                                       | (ha)          | IEP Land (%) | (ha)         | IEP Marine (%) |                              |              |
| Total protected area (ha)             | 16,145,025.26 | 31.89        | 7,329,252.46 | 6.87           | 23,474,277.71                |              |
| PA                                    | 6,316,313.95  | 12.48        | 500,808.80   | 0.47           | 6,817,122.75                 |              |
| Natura 2000 Network                   | 13,783,498.86 | 27.23        | 7,159,223.28 | 6.71           | 20,942,722.14                |              |
| Other international figures           | MAB           | 4,791,679.03 | 9.47         | 452,058.55     | 0.42                         | 5,243,737.58 |
|                                       | RAMSAR        | 281,220.48   | 0.56         | 25,605.52      | 0.02                         | 306,826.00   |
|                                       | SPAMI         | 51,857.86    | 0.1          | 96,625.70      | 0.09                         | 148,483.56   |
|                                       | OSPAR         | 0            | 0            | 242,269.67     | 0.23                         | 242,269.67   |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

In 2014 the protected land surface represented 31.9% of the total land area, while for marine territory the figure was 6.9%

The land surface belonging to the Natura 2000 network remained stable at around 27.2% of the total land surface

Biosphere Reserves covered 9.5% of Spain's land surface after increases in recent years

At present the competent administrations are working on the implementation of the corresponding management and plans and processes for the declaration of Special Areas of Conservation of the Natura Network

In 2014 the area of protected land of Spain was 16,145,025.26 hectares, a figure which represented 31.89% of the total surface. Meanwhile, the protected marine area was estimated at 7,329,252.46 ha, representing 6.87% of the total.

This protected area is constituted by Protected Areas (PA), the spaces included in the Natura 2000 network and linked to other forms of protection such as the Specially Protected Areas of Mediterranean Importance (SPAMI) or the RAMSAR Convention, among others.

The surface of Protected Areas (PA) grew slightly in 2014, as did areas belonging to the Natura 2000 network, representing 12.48% and 27.23% of the total land surface of Spain respectively. Also worthy of mention in terms of areas protected by international instruments is the increase in recent years of the Biosphere Reserves, accounting for up to 9.47 % of Spain's land surface.

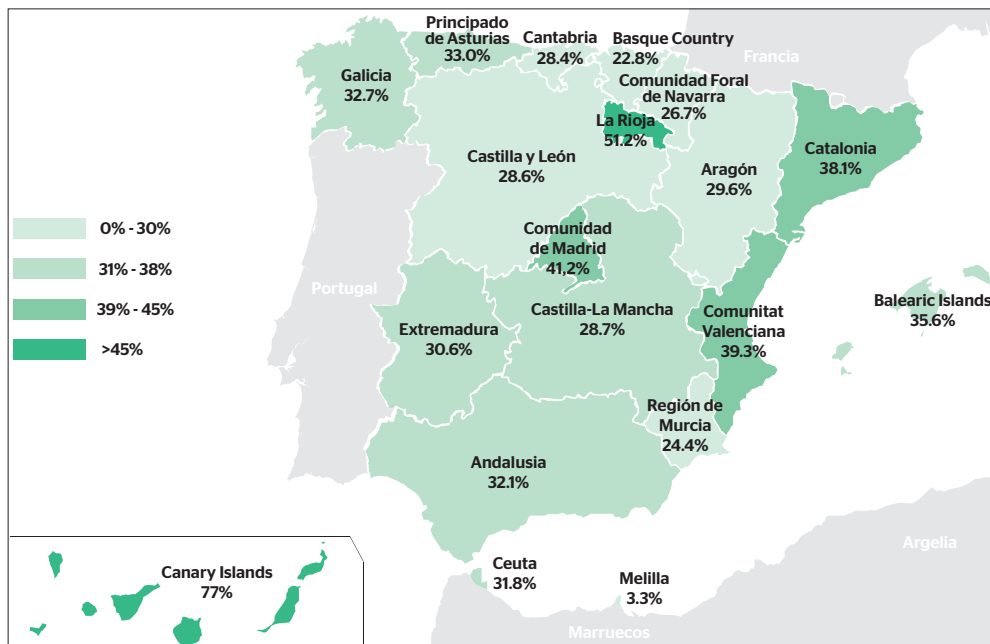
The Natura 2000 network reached 20,942,722.14 ha in 2014. In this respect, of the total, 13,783,498.86 ha were land and 7,159,223.28 ha were marine. It must be mentioned that the Natura 2000 network surface data do not correspond to the sum of the SICs and SPAs, as there are some overlaps between both forms of protection which should not be duplicated.

Turning to other areas protected by means of other international instruments, areas occupied by Biosphere Reserves have also increased in recent years, reaching 5,243,737.58 ha, of which 4,791,679,03 ha are land, while protected areas included in the RAMSAR Convention occupied 306,826 ha (with 281,383.6 ha being land). Specially Protected Areas of Mediterranean Importance (SPAMI) ended 2014 with 148,483.56 ha of which 96,625.70 were marine and the other 51,857.6 ha were land.

In relative terms of land area, the Canary Islands (77.0%), La Rioja, Madrid (41.2%) and the Comunidad Valenciana (39.3%) were the Autonomous Communities with the highest percentage of protected land area.



## Protected Land Surface 2014 (%) Total Spain: 31.9% 26

**Definition of the Indicator:**

This indicator represents the percentage of total protected area of Spain and offers disaggregated information for each instrument of protection: Protected Areas, spaces of the Natura 2000 network and the different areas protected by international instruments. The protected land area data by Autonomous Community is calculated in respect of the land area of each Autonomous Community.

**Methodological Notes:**

- Act 42/2007, of 13 December 2007 on Natural Heritage and Biodiversity defines natural protected spaces as "those spaces of the national territory, including inland waterways and marine waters (...) which comply with at least the following requirements and are so declared:
  - Contains natural systems or elements that are representative, singular, fragile, endangered or of special ecological, scientific, scenic, geological or educational interest.
  - Be specially dedicated to the protection and maintenance of biological diversity, geodiversity and natural resources and associated cultures."
- The Natura 2000 network is a European ecological network made up of Sites of Community Importance (SCIs) and Specially Protected Areas (SPAs), designated in accordance with the Habitat Directive (Directive 92/43/EEC), and the Specially Protected Areas for Birds (SPABs) established by virtue of the Birds Directive (Directive 2009/147/EC). Its purpose is to ensure the long-term survival of the species and types of habitat most endangered in Europe, as the most important instrument of conservation policy on biodiversity in the European Union. For the declaration of SPAs, Member States must make a proposal to the European Commission; for approval as a SCI, those spaces that contribute significantly to the maintenance or, where the case may be, re-establishment of the favourable state of conservation of the types of natural habitat of species of community interest and that they adopt the necessary management instruments for these sites.
- For the purposes of calculating the indicator:
  - Index of the area of protected land spaces (IET Land). Measured in % and calculated as follows = [Protected land area (ha) × 100] / Total land area of Spain (ha)
  - Index of the area of protected marine spaces (IET Marine). Measured in % and calculated as follows = [Protected marine area (ha) × 100] / Total marine area of Spain (ha)
  - Total land area of Spain (ha) = 50,622,369.35
  - Total marine area of Spain (ha) = 106,648,205.84
- The total protected area is not equivalent to the sum of the different figures for the different forms of protection there are some overlaps. That is to say, a certain area may form part of a PA and at the same time be included within the Natura 2000 network or any other form of protection. Definitely, the areas in which different protection instruments overlap are only counted once.
- 2014 saw the approval of Act 30/2014 of 3 December on National Parks, with the objective of conserving the natural values and landscapes, along with the raising of environmental awareness, fostering research and sustainable development of populations, coherent with the maintenance of cultural values and traditional activities and uses.

**Source:**

Nature Databank. Directorate-General for Environmental Quality and Assessment and Natural Environment. Ministry of Agriculture, Food and the Environment.

**Recommended Websites:**

- <http://www.magrama.gob.es/es/biodiversidad/servicios/banco-datos-naturaleza/default.aspx>
- <http://www.magrama.gob.es/es/biodiversidad/temas/espacios-prottegidos/>
- <http://www.magrama.gob.es/es/parques-nacionales-oapn/default.aspx>

## Forest land and other forest formations

### Forest land in the last 15 years (ha)



Spain has more than 27.7 million hectares of mountains, of which more than 18 millions are forest. It is the second country in the EU in terms of forest cover, after Sweden

Spain has the third largest wooded area cover of the EU with 18.8 million hectares, equivalent to 36.3% of the national territory

The treeless area is 9.3 million hectares which is equivalent to almost half of the European scrubland and grazing land (20.3 million hectares)

The mountains provide a broad array of ecological services, serve as a habitat for animal species and vegetation, protect the soil and the water system and contribute to the fight against climate change.

Spain is second in the European Union in terms of forest cover, with 27.7 million hectares, surpassed only by Sweden.

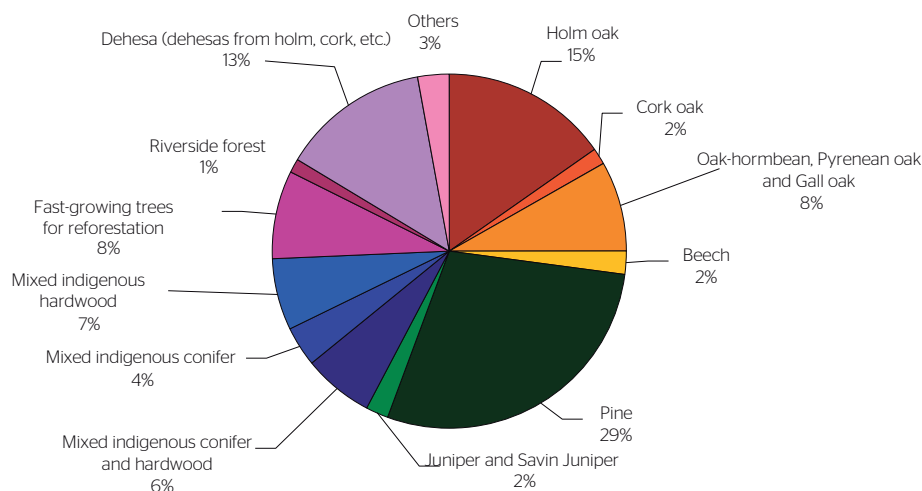
This area represents 54.8% of the national surface area and, of that, 66.3% (18.4 million hectares) is forest. The remaining 9.3 million hectares are comprised of treeless areas or areas with dispersed tree cover.

In Spain there are four bio-geographical regions (Atlantic, Mediterranean, Macaronesian and Alpine) which confer certain peculiarities upon vegetation and mean that forests are distributed unequally throughout the natural territory. While in Castilla y León (2.9 million ha), Andalusia (2.9 million) and Castilla-La Mancha (2.7 million) have the largest areas, in relative terms the Basque Country (54.9% of its territory), Catalonia (49.9%) and Galicia (49.0%) are the Autonomous Communities that offer the most cover as a proportion of their surface. On the other hand, Murcia and the Canary Islands, with 17.7% and 27.7% respectively, are the regions with the least tree cover in relative terms.

Areas with tree cover are classified as deciduous or coniferous, when the percentage of the area occupied is equal to or greater than 70% (whether a single species or several of the same group) or mixed, where this percentage of cover is not reached. In Spain, deciduous forests represent 55% of total tree cover, although in some regions such as Extremadura and Cantabria they account for more than 90%. In Murcia, coniferous species account for 92% of forest areas. The largest mixed areas are located in the Pyrenees area, Galicia and Catalonia.

By type of species, 60% of the forest area is comprised of formations with a dominant species, that is to say, occupying at least 70% or more of the forest area, or where no accompanying species reaches 30% of cover.

### Distribution of tree formations, 2014 (%)



According to the National Forest Inventory, more than 80% of forests are comprised of two or more species of trees. In terms of species, the most common extension is the oak, which represents 15.3% of all tree cover, some 2.8 million ha, followed by the Aleppo pine which occupies 2 million ha.

In respect of the number of trees, the comparison of forest inventories shows an upward trend in IFN2 and IFN3 and UFN4 pending completion.

#### Definition of the Indicator:

This indicator refers to the evolution of forest formations in Spain. In Spain, the concept of "mountain" is the result of the aggregation of wooded and treeless areas corresponding to the classification of the FAO of forest and other wooded areas, respectively.

#### Methodological Notes:

- Forest Area: terrain populated by forest tree species as the dominant vegetation and whose canopy cover fraction (CCF) is equal or greater than 10%. Equivalent to the FAO's definition of *Forest Land*.
- Treeless Wooded Land: terrain with a canopy cover fraction of less than 10% of forest tree species, if such are present, and is a mountain area with dispersed tree cover (CCF of 5-10%) and the treeless mountain area (CCF < 5%). It includes scrub lands, grazing lands and deserts. Equivalent to the FAO's definition of *Other Wooded Lands (OWL)*.

#### Sources:

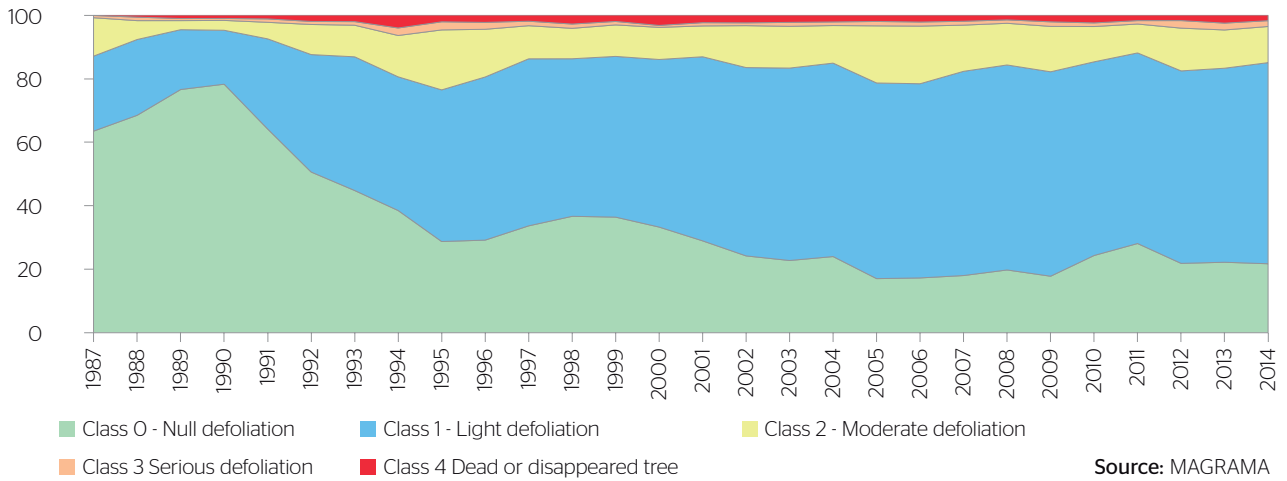
- Ministry of Agriculture, Food and the Environment. The National Forest Inventory (IFN) and its cartography base, the Forestry Map of Spain (MFE), both prepared provincially and every ten years. IFN2 (1986- 1996); IFN3 (1997-2007); IFN4 (begun in 2008); MFE50 (1997-2007). MFE25 (begun in 2007). National Data: Navarra, Galicia, Asturias, Cantabria, Balearic Islands, Murcia, Basque Country, La Rioja and Madrid: IFN4 and MFE25; Rest of the Autonomous Communities. IFN3 and MFE50.
- Ministry of Agriculture, Food and the Environment.. Sub-directorate General for Forestry and Mountains. Directorate Gneral for Rural Development and Forestry Policy.

#### Recommended websites:

[http://www.magrama.gob.es/es/ministerio/servicios/analisis-y-prospectiva/AvP\\_serie\\_n%C2%BA8\\_diagn%C3%B3stico\\_sector\\_FORESTAL\\_tcm7-348019.pdf](http://www.magrama.gob.es/es/ministerio/servicios/analisis-y-prospectiva/AvP_serie_n%C2%BA8_diagn%C3%B3stico_sector_FORESTAL_tcm7-348019.pdf)

## Forest defoliation

Forest Defoliation: percentage of trees according to class of defoliation



In 2014, the general condition of woodland presents some improvement on the previous year; 83.4% of the trees studied appeared healthy compared to 82.5% the previous year

In the year 2014, 85.1% of the trees studied appeared healthy, as opposed to 83.4% the previous year, approaching the levels seen in 2011 (88.2%).

13.2% of the trees showed defoliation above 25% while in 2013 this percentage was 14.2%. The number of trees damaged has fallen; on the one hand the number dead or disappeared trees has fallen to 1.6%, decreasing in the case coniferous species and increasing slightly in the case of deciduous species.

The recovery has been clearer for deciduous, with 81.6% of trees healthy (defoliation below 25%), for which the percentage was 79.4 the previous year. On the other hand, in the case of coniferous species, which in general in recent years have presented a better condition among the healthy trees, the percentage of healthy trees grew at a slower rate, going from 87.4% in 2013 to 88.6% in 2014.

The majority of dead trees are due to cutting for health reasons, forestry exploitation and processes of decay deriving from sporadic water shortages.

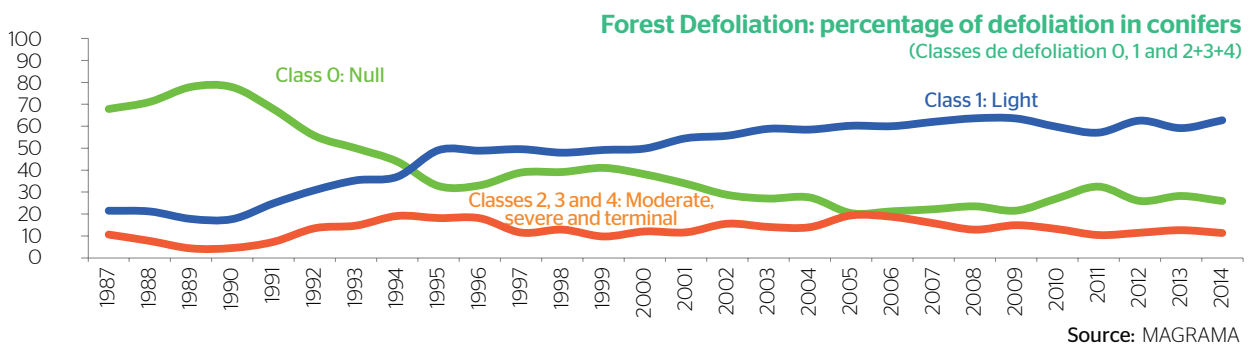
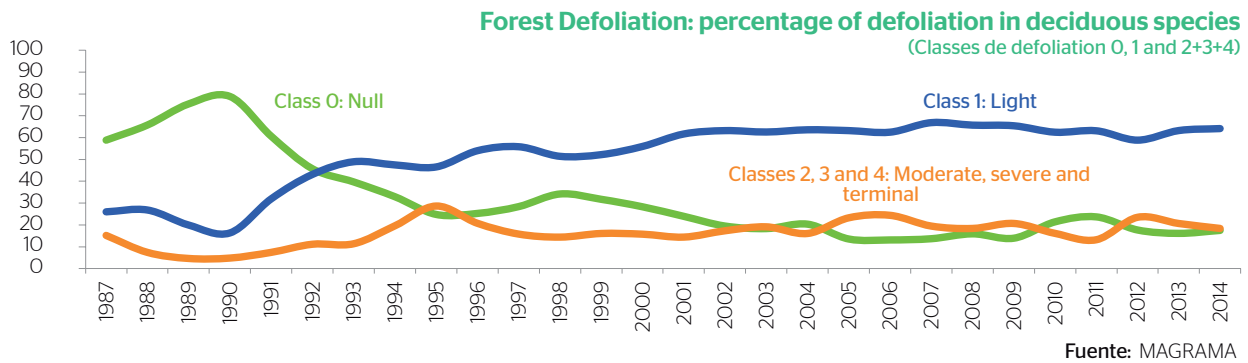
In terms of possible agents responsible for damage tree cover in mountain areas (defoliation >25%), there is an increase in abiotic damage (principally drought), while damage relating directly with biotic agents remained at the same level.

Causes of damage to forest areas. Year 2014  
(Only for trees with defoliation above 25%)

| Hunting and livestock | Insects | Fungi | Abiotics | Human intervention | Fire | Other | Unidentified causes |
|-----------------------|---------|-------|----------|--------------------|------|-------|---------------------|
| 0.6                   | 25.8    | 8.3   | 41.5     | 5.8                | 3.8  | 11.9  | 2.3                 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

Looking at agents that cause trees to die, we can observe a reduction in death caused by human action (felling, pruning etc.), fungus and abiotic damage. The greatest increase in tree death is due to fire.



### Definition of the Indicator:

Forest defoliation is the process by which a plant species loses its leaves due to pathological or climate stress which provokes the premature or abnormal loss of leaves. The level of forest defoliation allows us to ascertain the plant health conditions of forests and their evolution over time.

### Methodological Notes:

- Analysed on the basis of leaf loss of the canopy at a series of sample spots, classified in the following categories:

#### Loss of needles/leaves

- 0 - 10%
- > 10-25%
- > 25%

#### Rate of defoliation

- Null
- Light
- Moderate, serious and terminal

- In the framework of the UNECE International Cooperative Programme on Assessment and Monitoring of Air Pollution Effects on Forests, the European Network for Level I Damage to Forests is a systematic large scale international network, with more than 5,700 monitoring points set in grid formations of 16 x 16 km and that cover all of Europe, constituted in 1986 based on a randomly selected starting point. In this Network, analysis of the state of health of trees and of the major factors negatively affecting them is carried out. The number of points of the Spanish Network is currently six hundred and twenty. Its design, within the framework of the previous Forest Focus Community regulation and the current Life+ financial instrument (FutMon Project), allows the development of monitoring activities on other aspects such as the impact of climate change on forests, sustainable management and preservation of forest biodiversity.

### Source:

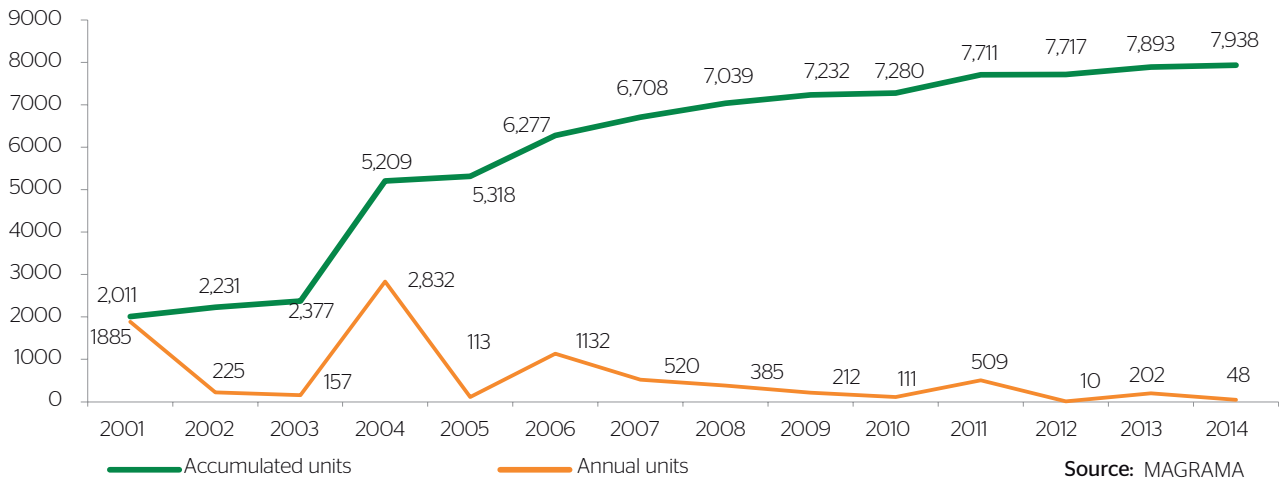
Ministry of Agriculture, Food and the Environment. Area of Inventory and Forestry Statistics (AIEF). Directorate General of Rural Development and Forestry Policy.

### Recommended Websites:

- <http://www.magrama.gob.es/es/desarrollo-rural/temas/politica-forestal/inventario-cartografia/redes-europeas-seguimiento-bosques/red-nivel-i-inf-tecnicos-idf-ccaa-2014.aspx>
- [http://www.magrama.gob.es/es/desarrollo-rural/temas/politica-forestal/modulo02resultadosespana2014\\_tcm7-378760.pdf](http://www.magrama.gob.es/es/desarrollo-rural/temas/politica-forestal/modulo02resultadosespana2014_tcm7-378760.pdf)
- <http://icp-forests.net>

## Forest reproductive material

### Number of Units of Approval of the National Catalogue of Basic Materials



The Base Material is comprised of those populations, plants and clones from which forest reproductive material (seeds and plants) is derived for the purposes of forest repopulation. The types of basic material currently approved are seed sources, stands, seed orchards, family progenitors, clones and their mixes.

The National Catalogue of Base Materials is the registry for all these types of base material, kept in order to obtain the different categories of identified, selected, qualified and controlled reproductive material.

The principal objectives of the National Catalogue are to provide the user with a guarantee of the origin and quality forest reproductive material and to provide the consumer with the knowledge of their characteristics and thus facilitate the selection of the most appropriate material.

In 2014, 48 new units of approval were included on the National Register of Base Materials which, after the removal of 3, made for an accumulated total of 7,938 authorized source materials. Of the total units of approval, 7,393 refer to the category identified, of which 7,362 correspond to seed sources and only 31 select stands, 367 units of the chosen selected category (select stands), 131 of the qualified category and 47 units listed in the controlled category. In terms of surface area, units of approval occupy approximately 5.87 million hectares, having extended the authorized area for the collection of forest reproductive material to 15,156.9 hectares.

The approval of base material by the Autonomous Communities has not been homogeneous, there being great differences between the number of units of approval of some Autonomous Communities and others. Castilla y León is the Autonomous Community with the greatest number of units of approval with 3,941 and 662,258 ha of authorised area, followed by the Comunidad Valenciana and La Rioja with 777 units (852,923 ha) and 756 units (1,623,569 ha) authorised respectively. At the other end are the Balearic and Canary Islands which, with 44 (16,512 ha) and 51 units (46,538 ha) authorised respectively, are the Autonomous Communities with the lowest number of units of approval incorporated.

In 2014 the number of source materials on the National Register increased by 48 units of approval

The total number of accumulated units of approval increased to 7,938 in 2014

## Existing units of approvals in the National Catalogue of Source Materials. Year 2014

| TYPE OF BASE MATERIAL | CATEGORY   | NO. OF UNITS OF APPROVAL AS OF 31/12/2014 | SURFACE OF UNITS OF APPROVAL (ha) |
|-----------------------|------------|---|-----------------------------------|
| Seed sources          | Identified | 7,362                                     | 5,838,980.40                      |
| Select identified     | Identified | 31  | 13,994.40                         |
|                       | Selected   | 367                                       | 19,006.20                         |
| Seed orchards         | Qualified  | 25  | 79.60                             |
|                       | Controlled | 2   | 19.20                             |
| Family progenitors    | Qualified  | 36  | Unquantified<br>Insignificant     |
|                       | Controlled | 4   |                                   |
| Clones                | Qualified  | 70  | Not applicable                    |
|                       | Controlled | 41  |                                   |
| <b>TOTAL</b>          |            | <b>7,938</b>                              | <b>5,872,079.80</b>               |

*\*It must be remembered that, in the areas studied, there is sometimes some overlap with areas populated by different species or, on occasion, for practical reasons, municipal districts and whole mountains as source materials, whose surface area exceeds the real surface area occupied by these formations.*

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

### Definition of the Indicator:

This indicator studies the evolution of the units of approval that comprise the National Catalogue of Source Materials (seed sources, stand, seed orchard, family progenitors, clones and clone mixes) classified according to their category (identified, selected, qualified and controlled).

### Methodological Notes:

- The Basic Material is comprised of those populations, plants and clones from which forest reproductive material (seeds and plants) is derived for use in repopulation. They types of basic material currently approved are seed sources, stands, seed orchards, family progenitors, clones and clone mixes, the descriptions of which are compiled in Royal Decree 289/2003 of 7 March on the marketing of forest reproductive material.
- Managing the National Catalogue involves the ecological profiling of each of the materials approved and is carried out by the Directorate General of Rural Development and Forestry Policy (MAGRAMA) in collaboration with the Autonomous Communities. The new source materials are published in the Official State Gazette (BOE) and form part of the Community List of Source Materials.

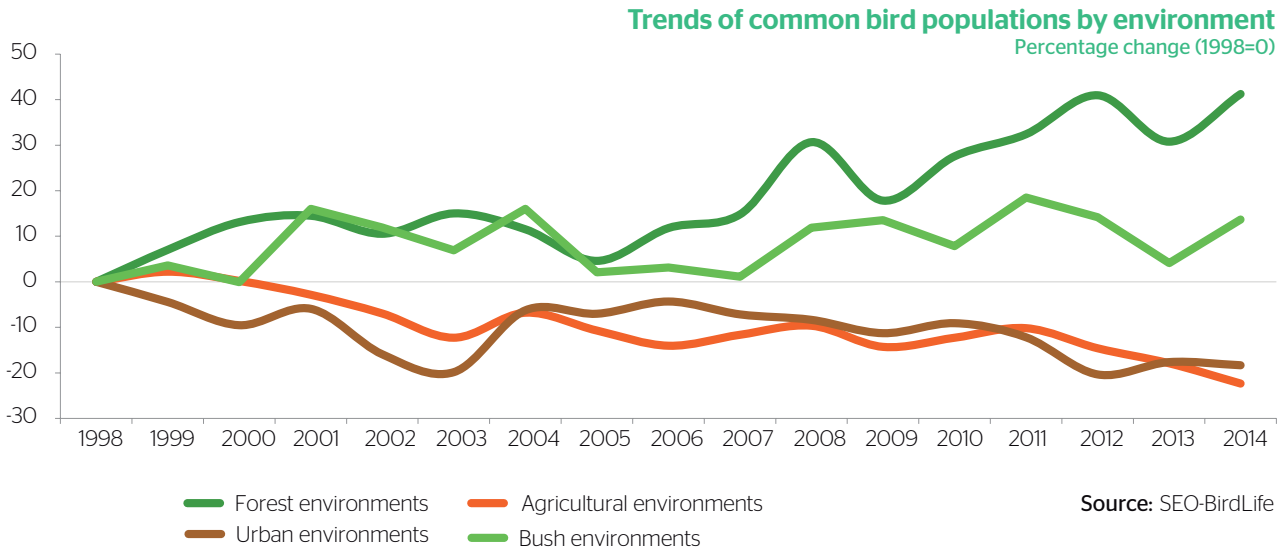
### Source:

Situation of National Register and Catalogue of Source Materials. Annual Report. December 2014. Genetic Resources and Forestry Service. Ministry of Agriculture, Food and the Environment.

### Recommended websites:

<http://www.magrama.gob.es/es/desarrollo-rural/temas/politica-forestal/recursos-geneticos-forestales/default.aspx>

## Trends in common bird population



The samples, repeated at more than 25,000 points, confirm the different responses to the indicator according to the environment in question

The populations of forest and bush birds experienced increases in most seasons

The population trends for agricultural and urban environments are experiencing a downward trend and present negative values for recent years

Bird populations associated with forest environments are positive on the whole and have experienced population increases most years. Although they have experienced occasional decline, they have always maintained positive values. In 2014, for example, another increase was observed, reversing the downward trend experienced since 2013.

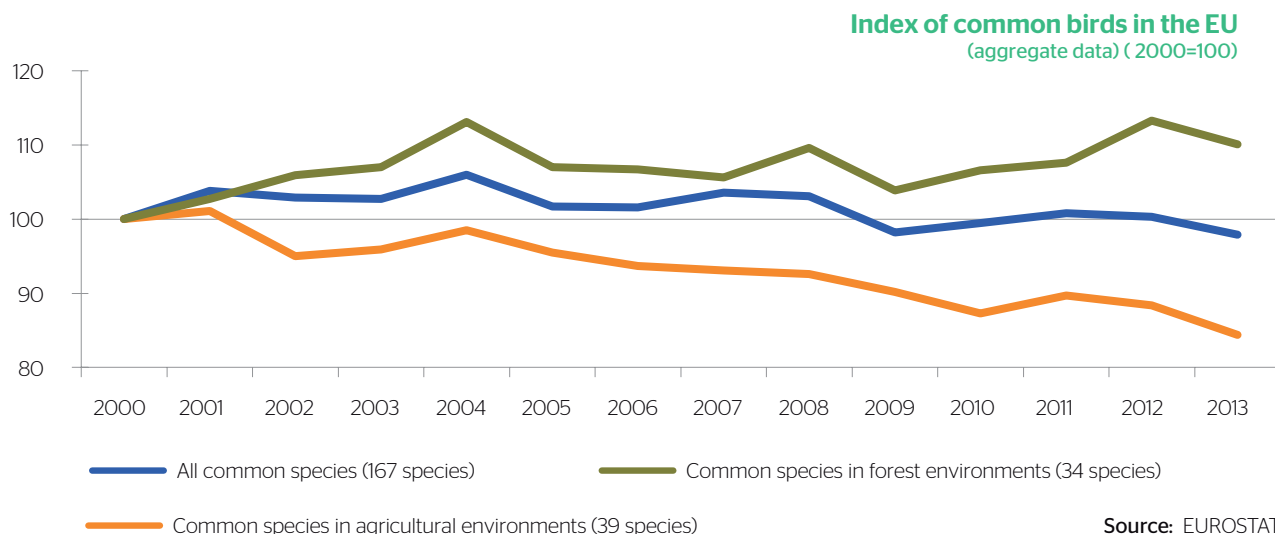
In bush environments, bird population trends show similar behaviour to those associated with forest environments, although with slightly inferior percentage changes.

Populations associated with agricultural and urban environments show downward trends with negative values practically from the outset for their monitoring programmes. Contrary to the experience in forest and bush environments, where occasional fluctuations allow for the annual recoveries of populations, the decline of birds in agricultural environments is more continuous, showing scarcely any recovery in recent years (2011-2014).

In principle, the greater threat for birds and the main cause of the downward trends observed is the destruction and disappearance of the habitat. In agricultural environments, this is due more to the intensification of practices in this environment and the loss of traditional use. The use of new plant-health products is also a factor to consider and one that not only affects birds, but also other groups of fauna that are frequent in these environments.

In the EU, the common bird population has maintained a certain stability, albeit if populations did improve between the years 2000 and 2008, before then suffering a decline and returning, more or less, to pre-2000 levels. Forest environments show an upward trend on average, which in 2010 was 10% in respect of the situation in 2000. Agricultural environments, on the other hand, show a decline in populations, just as in Spain.





### Definition of the Indicator:

This indicator, calculated in Spain by the Spanish Ornithology Society (SEO/BirdLife) through the Common Reproductive Birds Monitoring Programme (SACRE) represents the annual change percentage of common birds in Spain in respect of the existing population in the year of reference, 1998 (first year in which samples were taken in all the state territory using a unified methodology).

### Methodological Notes:

- The Index of populations of common birds (IPA) is measured as a % and calculated as follows  $IPA = [No. \text{ of birds in the current year} \times 100] / No. \text{ of birds in the year of reference}$
- The number of birds is evaluated, taking into account the results offered by close to a thousand volunteer participants in the SACRE programme in recent years. Each of them carries out, with two annual samples in the breeding season, monitoring of the UTM grid of 10 x 10 km with 20 listening stations in homogeneous habitats (forest, agricultural, urban and bush). [http://www.seo.org/wp-content/uploads/2012/04/instrucciones\\_sacre\\_2013\\_3.pdf](http://www.seo.org/wp-content/uploads/2012/04/instrucciones_sacre_2013_3.pdf)

### Sources:

- Spanish Ornithology Society, 2015. SEO/BirdLife Avifauna Monitoring Programmes Year 2014. <http://www.seo.org/boletin/seguimiento/boletin/2014/>
- Update Report for 2014 on trends in common bird populations in Europe through the Common Pan-European Common Bird Monitoring Scheme (PECBMS) <http://www.webcc.info/index.php?ID=487>

### Recommended Websites:

- <http://www.seo.org/>
- <http://www.seo.org/2012/05/07/resultados-de-los-programas-de-seguimiento-de-avifauna/>
- <http://ec.europa.eu/eurostat/data/database>

## Diversity of wild terrestrial species

| Diversity of wild terrestrial species: Index of Terrestrial Species (IE) |                      |                             |
|--|----------------------|-----------------------------|
|  | Total No. of species | No. of species under threat |
| <b>TERRESTRIAL VERTEBRATES</b>   | <b>738</b>           | <b>216</b>                  |
| Terrestrial mammals  | 108                  | 22                          |
| Birds  | 336                  | 69                          |
| Amphibians   | 39                   | 10                          |
| Reptiles   | 101                  | 20                          |
| Inland fish  | 154                  | 95                          |
| <b>TERRESTRIAL INVERTEBRATES</b>   |                      |                             |
| Terrestrial invertebrates  | 57,000               | >258 (>0.5%)                |
| Vascular plants  | 6,500-8,000          | 1196 (15-18%)               |
| Non-vascular terrestrial plants  | >2000                | >170 (>9%)                  |
| Bryophytes   | 1100                 | >170 (>15%)                 |
| Fungi  | 23,000               | -                           |
| <b>TOTAL TERRESTRIAL SPECIES (APPROX)</b>                                | <b>91,000</b>        | <b>-</b>                    |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

The IEET includes a small section of land species (approximately 1.6%), mostly vertebrates

Of the 738 species of wild land vertebrates included on the IET, 216 (29.3%) are considered under threat

Of the data presented, only those relating to vertebrates can be considered representative, for which the Spanish Inventory of Terrestrial Species (IEET), in Spanish has practically 100% coverage of these species.

It is not possible to carry out a full analysis due to the lack of information that affects a great part of taxonomic groups, particularly invertebrates and fungi. The richness and originality of terrestrial vertebrates is particularly high in the European and Mediterranean area. Among the states that make up this geographic space, Spain finds itself behind only Turkey in terms of wealth of species and levels of endemism.

**Definition of the Indicator:**

This indicator represents the number of wild terrestrial species that live spontaneously throughout Spain and compares this with the number of same that have any level of protection and, therefore, are included in one of the protection categories of the International Union for Conservation of Nature (IUCN).

**Methodological Notes:**

- The Terrestrial Species Index (IET) is measured in numbers and is calculated as the number of terrestrial birds that live in Spain.
- The Spanish Inventory of Terrestrial Species is regulated through Royal Decree 556/2011, of 20 April, for the development of the Spanish Inventory of Natural Heritage and Biodiversity. It compiles the distribution, abundance and state of conservation of the fauna (vertebrates and invertebrates) and flora (vascular and non-vascular) in Spain.

**Source:**

Spanish Inventory of Terrestrial Species Nature Databank. Sub-directorate General for the Natural Environment of the Directorate General of Quality and Environmental and Nature Assessment.

**Recommended websites:**

<http://www.magrama.gob.es/es/biodiversidad/temas/inventarios-nacionales/inventario-especies-terrestres/>



## Environmental monitoring

### Number of actions carried out by the Spanish Guardia Civil concerning environmental matters



Organic Law 2/1986 of 13 March on the Security Forces entrusts the Guardia Civil with the conservation of nature and the environment. Consequently, in 1998 the Nature Protection Service (SEPRONA) was created, which is responsible for the protection of the soil, water and atmosphere, animal health and the conservation of species of flora and fauna, hunting and fishing activities and firefighting.

In the evolution of the number of actions taken by SEPRONA relating to the environment in the last decade (2005-2014) one can observe how administrative infractions show a reduction in number, reaching a minimum halfway through the period, only to increase gradually to once again reach the initial levels. In the case of infractions of a penal nature, its evolution in the last decade is not so defined, although if the period is delimited, one can see how in the last four years a reduction has been registered in the number of these actions.

Altogether, since 2014 actions taken by SEPRONA have increased by 9.8% on the previous year, going from 144,940 to 159,091 interventions. In total, 98.5% were infractions of an administrative nature, 1.0% were criminal offences and 0.5% misdemeanours.

The number of infractions of an administrative nature rose 10% in the last year, reaching 156,668 in 2014. On the contrary, the number of penal infractions experienced a reduction of 3.7% registering a total of 2,423 actions in 2014. Of them, 1,570 constituted a criminal offence (64.8%) and 853 were misdemeanours (35.2%).

If we turn to the the type of crime, forest fires with 349 interventions in 2014 was the category with the highest number of infractions (22.2%), followed by electrical fraud with 129 interventions (18.7%) and mistreatment and abandoning of animals with 292 interventions (18.6%).

In 2014 the number of arrests for environmental crimes rose by 29.9%

In the same year, the number of infractions fell by 3.7%



| Interventions of the Guardia Civil in matters relating to the environment |                |         |         |         |         |         |
|---|----------------|---------|---------|---------|---------|---------|
|   |                | 2010    | 2011    | 2012    | 2013    | 2014    |
| Infractions   | Penal          | 2,946   | 3,465   | 3,185   | 2,515   | 2,423   |
|   | Administrative | 115,650 | 133,002 | 141,050 | 142,425 | 156,668 |
| Arrests   |                | 274     | 313     | 298     | 368     | 478     |

Source: Prepared by the authors using data from SEPRONA

In 2014 the number of arrests carried out by SEPRONA rose to 478, of which 475 were related to criminal offences and only 3 were misdemeanours. Of the total arrests relating criminal offences, 19.1% were for electrical fraud, 12.8% for hunting and 12.2% for the use of harmful and chemical substances. Finally, the number of arrests relating to forest fires represented only 8% of the total.

### Definition of the Indicator:

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

### Methodological Notes:

- For the calculation of the indicator, in this edition only interventions on the part of SEPRONA and other units of Guardia Civil with responsibility for the environment have been considered.
- When profiling the type of crime, one must bear in mind when analysing the figures that inspection campaigns are sometimes carried out in a specific area, this bringing about an increase in infractions in this area.

### Sources:

- Ministry of Home Affairs, 2014. Citizen Information Office of the Guardia Civil. Directorate General of Police and the Guardia Civil.
- Ministry of the Interior, 2014. Nature Protection Service (SEPRONA). Directorate General of Police and the Guardia Civil.

### Recommended Websites:

- <http://www.guardiacivil.org>
- [http://www.guardiaciviles.es/servicios/atencionciudadano\\_1/](http://www.guardiaciviles.es/servicios/atencionciudadano_1/)



# COASTS AND MARINE ENVIRONMENT 2.7

According to the report on the “First Phase of Implementation of the Marine Strategy Framework Directive (2008/56/EC), COM(2014) 97 final”, the surface of the seas of Europe is greater than the land surface and is home to a rich, fragile and unique marine life. On average, 41% of the population of Europe live in coastal regions and a great number of economic activities depend on the marine world, which gives rise to great pressure from human activity, both on land and sea.

The assessment of the environmental state of the European seas is based on aspects such as important as the situation of over exploitation of fish stocks, the contamination of the marine environment by high concentration of nutrients (and the depletion of the oxygen derived) and by certain dangerous substances, or the accumulation of waste and marine litter, mostly plastic, with this last problem rising at an unknown rate. Other aspects that contribute to the degradation of marine life cannot be forgotten, such as the effects of climate change or accidental spills.

Spain has a coastline of just over 10,000 kilometres in length, with a rich and varied natural coastal and maritime heritage that requires great efforts for conservation and protection. This coast is home to important tourism and fishing industries and offers a strategic communication position between continents and seas.

Two new legislative developments in 2014 were Royal Decree 876/2014 of 10 October approving the General Regulation of Coastal Areas and Order AAA/702/2014 of 28 April, approving the State Plan for the Protection of the Sea Shore against Pollution (Ribera Plan). This last instrument is framed within the National Response System against marine pollution and complements the Territorial Plans established by the Autonomous Communities. Its aim is to ensure actions are coordinated in the event of a pollution episode of supra-regional or supra-national nature, or in those cases of special need in which irreparable damage may be imminent.



### Litter on beaches, an indicator in the marine strategies framework

- Once the proposal of the monitoring programmes was finalized, work is currently being done on the Programmes of Measures, which should be ready by late 2015
- This indicator is just an example of the various indicators that must be analysed, and the marine strategies used, for the assessment and monitoring of the status of the marine environment.
- Marine Strategies, including the Programmes of Measures, will be approved by Royal Decree in accordance with the provisions of Article 15 of Law 41/2010 on the protection of the marine environment.

### Spanish Network of Marine Protected Areas (RAMPE)

- The RAMPE will devise a consistent and managed network of protected marine spaces in Spanish waters in order to ensure protection, conservation and recovery of the natural heritage and Spanish marine biodiversity.
- The RAMPE is made up of protected spaces located in the Spanish marine environment, representing the natural marine heritage, regardless of the fact that the management and declaration thereof are regulated pursuant to international, community and state regulations. Likewise, it is also possible to include in the Network those spaces whose management and declarations are regulated pursuant to regional rules in accordance with the provisions set forth in article 36.1 of Act 42/2007, of 13 December, on Natural Heritage and Biodiversity.

### Quality of coastal bathing water

- 2014 has been the year with the shortest bathing season since 2006 with 123 days on average.
- 88% of marine bathing areas presented an excellent level of quality.
- Only 8 member states of the coastal zone presented percentages of "excellent" water quality superior to that of Spain.

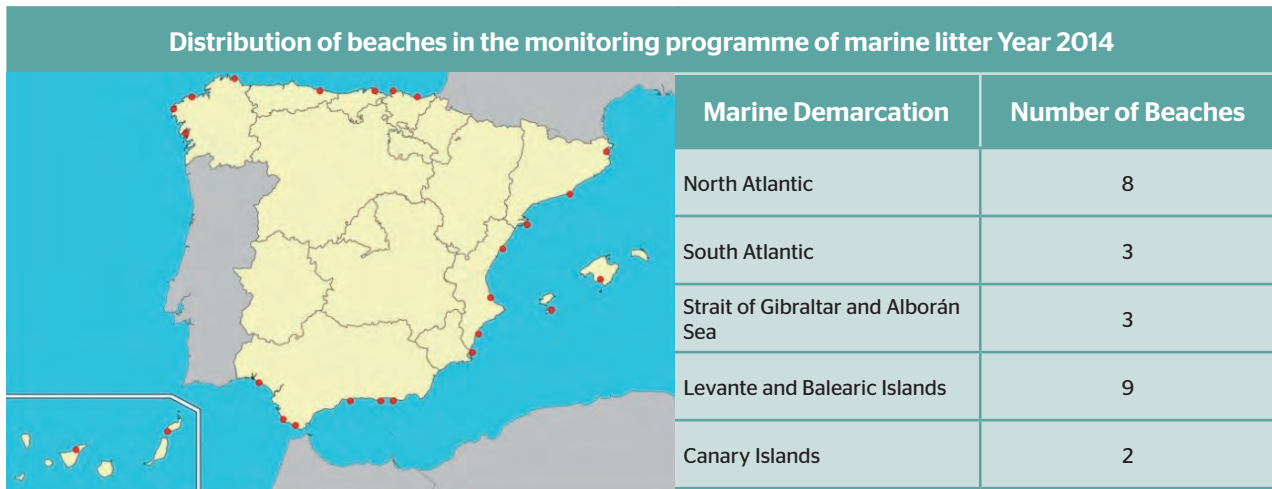
### Spanish Inventory of Marine Habitats and Species (IEHEM)

- The IEHEM, an essential tool for the knowledge, planning and management of our natural marine heritage, responds to the obligation to prepare the Spanish Inventory of Natural Heritage and Biodiversity, as detailed in Law 42/2007, of 13 December, developed by R.D. 556/2011, of 20 April.
- Descriptive files have been published for some species and habitats on the Inventory; these publications will be updated regularly.
- All this is available for download in the "Coasts and Marine Environment" section of the Ministry's website.

### Demarcated coastline

- In 2014, the Spanish coast was demarcated on 95.65% of its total length.
- Demarcation is the instrument established to determine the Public Maritime-Terrestrial Domain and is implemented by the General State Administration.

## Litter on beaches, an indicator in the marine strategies framework



Source: MAGRAMA

Once the proposal of monitoring programmes is finalized, work is to be performed this year on the Programmes of Measures, which should be ready by late 2015

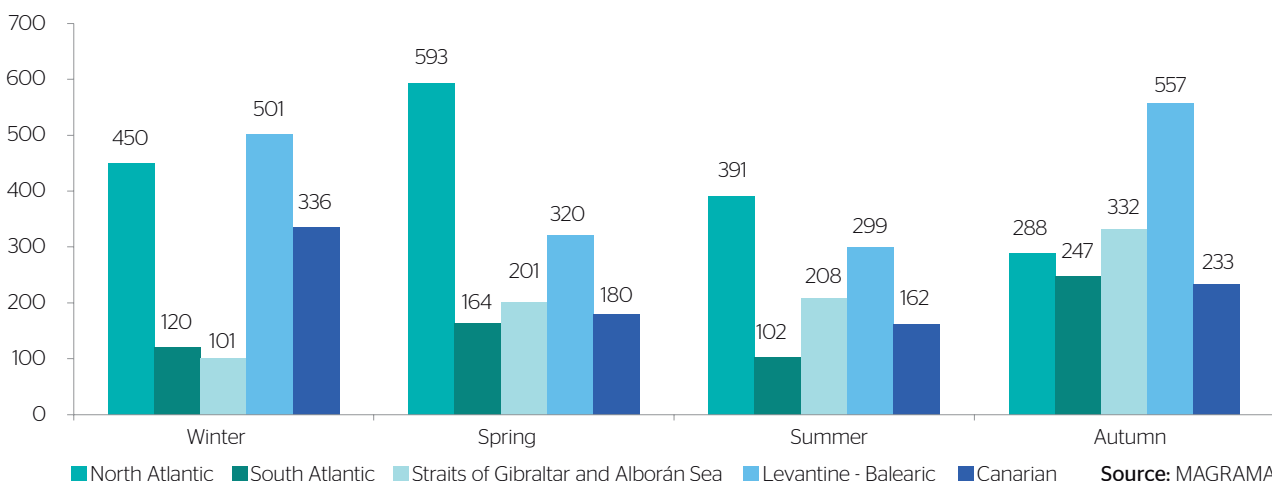
This indicator is just an example of the diverse indicators that must be analysed as part of marine strategies for the assessment and monitoring of the state of the marine environment

Among the monitoring programmes on marine strategies there is one indicator relating to **litter on beaches**. This indicator was used as a descriptor of the good environmental status (D10) to evaluate the state of a marine environment in the previous phase of the strategy and obtained through a specific monitoring programme.

This monitoring goes back to 2001, when MAGRAMA committed to the programme established by the **OSPAR Convention**. From 2013 and taking advantage of the experience obtained, MAGRAMA decided to increase routine controls and monitoring of beaches including some on the Mediterranean, and creating the current "**Marine Litter on Beaches Control Programme**", which is developed on a seasonal basis on 26 beaches of the Spanish coast. This Programme is carried out for the purposes of counting and classifying the objects found by type (plastic, rubber, wood, paper, cardboard, glass, metal, fabric, hygiene-sanitary products, clinical waste and others) to compare the situation on different Spanish beaches, calculate trends and provide systematic information that allows us to establish measures oriented towards reducing litter that reaches the marine environment.

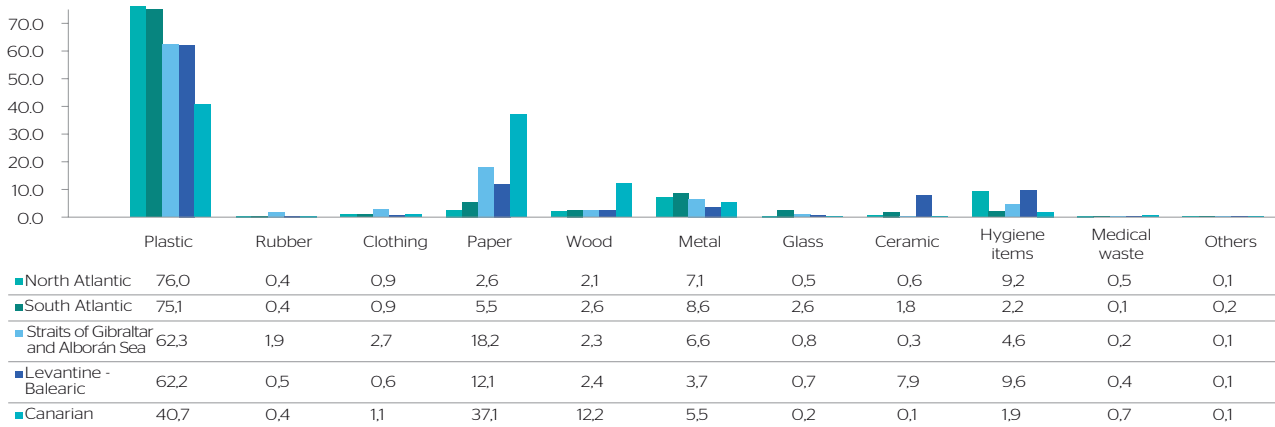
The statistical analysis of the data collected during the first two years of the programme's development provided a relevant vision on the densities of accumulation of marine litter on the beaches along all of the Spanish coast. Results for the year 2014 are shown in the charts below:

### Average No. of objects found during each inspection campaign, 2014





**Distribution of the type of marine litter in 100 metre transect during the year 2014 (%)**



Source: MAGRAMA

### Composition of Marine Strategy Monitoring Committees

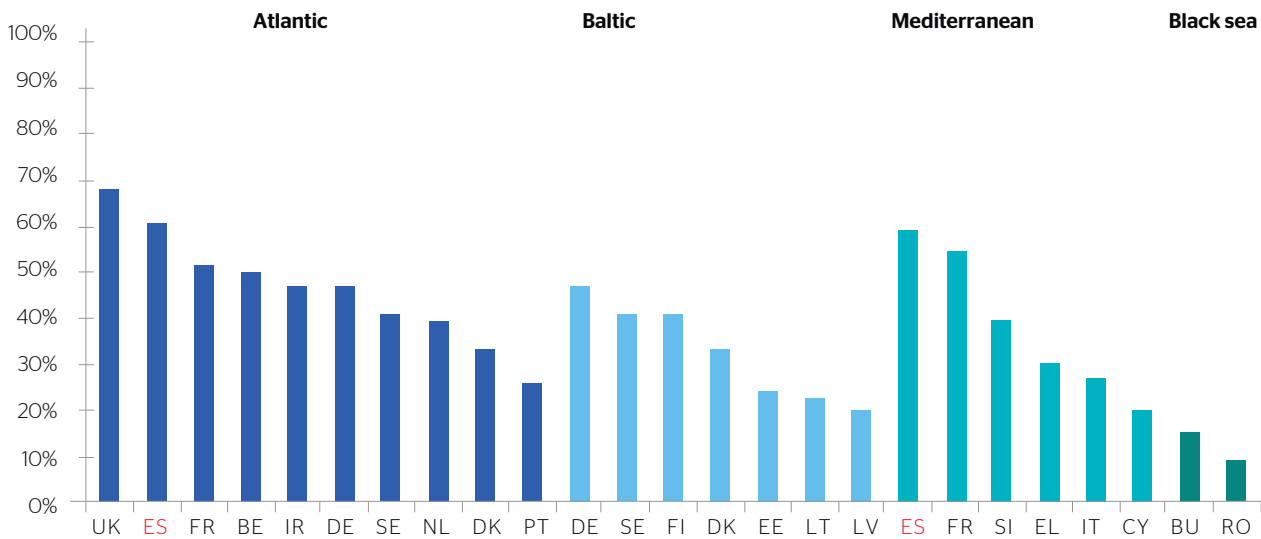
In 2014, Order AAA/705/2014 of 28 April was approved, creating the Marine Strategy Monitoring Committees and regulating their composition, functions and way of operating. These committees are collegiate bodies constituting the principal tool of cooperation with the Autonomous Communities. The five committees (one per marine demarcation) were created between February and November 2014, all feature members representing the coastal Autonomous Communities for each demarcation and members representing the General State Administration.

It is expected that these committees become the fundamental forum for cooperation with the Autonomous Communities to set in motion the monitoring programmes and to establish proposals for programmes of measures, both processes to be developed in 2015. Committees are expected to report regularly to the Environment Sectoral Conference.

Marine Strategies, including the Programmes of Measures, shall be approved by Royal Decree in accordance with the provisions of Article 15 of Law 41/2010 on the protection of the marine environment. These must be updated every six years



## Implementation of the first phase of the Marine Strategies in the EU



Source: European Commission

### European Commission assessment of the first stages of Marine Strategies.

In February 2014, the EU published its report on the assessment of Article 12 of the Marine Strategy Framework Directive. This report included in-depth analysis of the application of the **first stages of marine strategies on the part of Member States**. The overall assessment for Spain has been very positive. We are the highest ranked country in the Mediterranean and the second in the Atlantic ([http://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/implementation/reports\\_en.htm](http://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/implementation/reports_en.htm))

- Some of the aspects recognized as very positive are:
  - Spain has made extensive use of, and gone to great efforts to compile, all the the existing information on the marine environment. The focus used on the five marine demarcations is consistent. All descriptors have been covered, along with the most significant pressures and impacts. The economic and social analysis has also been adequately applied.
  - The definitions of Good Environmental Status are very detailed, as are the proposed environmental objectives. The fact that the objectives are approved by the Agreement of the Council of Ministers gives them legal weight, which is valued positively by the Commission.
  - Spain has adequately described the activities carried out in the area of the OSPAR and Barcelona Regional Agreements oriented towards guaranteeing adequate regional coordination.
  - The knowledge gaps have been clearly identified and some of the environmental objectives put forward have been designed to fill these gaps.
- As aspects to improve upon the following are highlighted:
  - The need to improve some of the definitions of Good Environmental Status, with the objective of obtaining more quantifiable definitions.
  - Some environmental objectives must me more ambitious, and cover all the identified environmental pressures.



## General Analysis of Marine Strategies

In 2014, a landmark was reached in marine strategy with the design of monitoring programmes. For that, MAGRAMA compiled an inventory of existing monitoring programmes, carried out by diverse administrations and scientific institutions including the third sector, or social action groups.

The scientific and technical team from the IEO (Spanish Oceanographic Institute) and the CEDEX (Spanish Centre for Public Works Studies and Experimentation) prepared a proposal with indicators based on the results of various workshops with experts and the administrations involved. From this proposal, 13 monitoring programmes were designed (one for each descriptor or group of descriptors), which were duly divided into various sub programmes. These sub programmes integrate all the existing monitoring processes and propose additional monitoring campaigns in those fields where needs were identified.

Public consultation took place from July 18 to September 30 and the final documents can now be consulted on the MAGRAMA web page.

### Source:

[Ministry of Agriculture, Food and the Environment, 2015. Information supplied by the Directorate General for Coastal and Marine Sustainability](#)

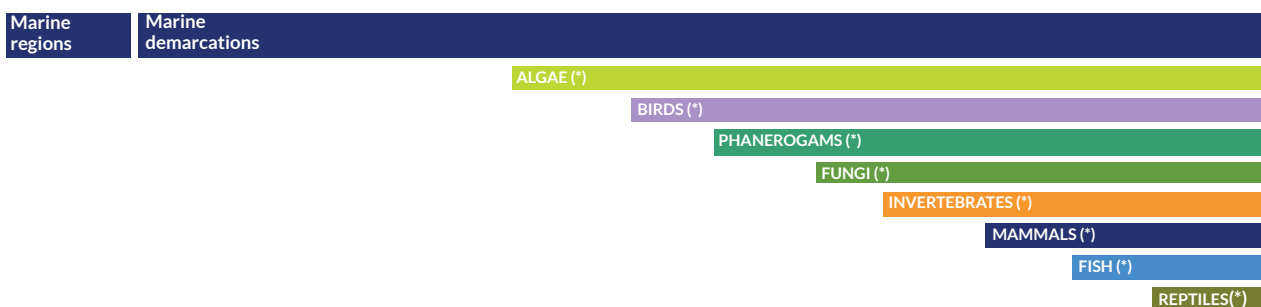
### Recommended Websites:

- <http://www.magrama.gob.es/es/costas/temas/proteccion-medio-marino/estrategias-marinas/>
- <http://www.magrama.gob.es/es/costas/temas/proteccion-medio-marino/actividades-humananas/basuras-marinas/default.aspx>
- [http://ec.europa.eu/environment/marine/index\\_en.htm](http://ec.europa.eu/environment/marine/index_en.htm)



## Spanish Inventory of Marine Habitats and Species (IEHEM)

### Spanish Inventory of Marine Habitats



| Marine Regions and Demarcations             | Algae (*) | Birds (*) | Phanerogams (*) | Fungi (*) | Invertebrates (*) | Mammals (*) | Fish (*) | Reptiles (*) |
|---|-----------|-----------|-----------------|-----------|-------------------|-------------|----------|--------------|
| Atlantic North-East R.                      | 571 (51)  | 58 (50)   | 12 (7)          | 0 (0)     | 1,547 (116)       | 74 (59)     | 584 (79) | 11 (10)      |
| North Atlantic Marine Demarcation           | 384 (40)  | 56 (50)   | 10 (7)          | 0 (0)     | 1122 (80)         | 70 (59)     | 366 (65) | 11 (10)      |
| South Atlantic Marine Demarcation           | 279 (38)  | 53 (49)   | 11 (6)          | 0 (0)     | 430 (84)          | 67 (59)     | 414 (64) | 11 (10)      |
| Canarian Marine Demarcation                 | 474 (42)  | 50 (48)   | 9 (6)           | 0 (0)     | 644 (102)         | 72 (59)     | 261 (44) | 10 (10)      |
| Mediterranean Sea Region                    | 772 (65)  | 61 (53)   | 12 (6)          | 4 (0)     | 2,469 (126)       | 70 (59)     | 566 (76) | 11 (10)      |
| Estrecho and Alborán Marine Demarcation     | 438 (64)  | 58 (51)   | 12 (6)          | 4 (0)     | 1,996 (124)       | 69 (59)     | 439 (74) | 11 (10)      |
| Levante-Balearic Islands Marine Demarcation | 720 (65)  | 55 (52)   | 10 (6)          | 0 (0)     | 1,904 (120)       | 68 (59)     | 555 (76) | 11 (10)      |

(\*) Species with some level of protection.

Source: Directorate General for Coastal and Marine Sustainability -MAGRAMA. MAGRAMA. Records processed as of 27/02/2014

The IEHEM, a crucial tool for the knowledge, planning and management of our natural marine heritage, responds to the obligation to prepare the Spanish Inventory of Natural Heritage and Biodiversity, as detailed in Law 42/2007, of 13 December, developed by R.D. 556/2011, of 20 April

Descriptive files have been published for some species and habitats on the Inventory. These publications will be updated regularly

Everything is available for download in the "Coasts and Marine Environment" section of the Ministry's website

The Spanish Inventory of Marine Habitats and Species (IEHEM) consists of two elements, that relating to species on the one hand and habitats on the other.

The **Spanish Inventory of Marine Species (IEEM)** has advanced in 2014 with the constitution of a group of species experts to prepare the Pattern List of Marine Species in Spain. The extraordinary geomorphological, oceanographic and bio-geographical heterogeneity we have in our country translates into a great variety of the Spanish marine environment, which treasures the most diverse marine biology in Europe.

Due to these characteristics, the number of species registered on this list is quite high. The list will be published in 2016.

The **Spanish Inventory of Marine Habitats (IEHM)** had as its starting point the development of the Pattern List of Marine Habitats Present in Spain, a state reference list which identified 886 marine habitats and their hierarchical classification published through the Resolution of 22 March 2013 of the Director General for Coastal and Marine Sustainability. In 2013, the Spanish Inventory of Marine Habitats (IEHM) was presented in the form of a digital publication "The Interpretative Guide to Marine Habitats in Spain."

The marine taxa are sorted by groups identified up to February 2014 within the framework of the Spanish Inventory of Marine Species.

The information represented by this map is precisely accurate and shows the cartographic information of marine habitats at a municipal level, within the framework of the Spanish Inventory of Marine Habitats.



## IEHM. Marine habitats present in Spanish waters 2.7



Source: Directorate General for Coastal and Marine Sustainability -MAGRAMA. MAGRAMA. Records processed as of 27/02/2014

### Definition of the Indicator:

The Pattern List of Marine habitats includes 886 identified habitats. The number of taxa identified as marine remains pending confirmation, for birds and phanerogams it refers strictly to those considered marine.

### Source:

[Ministry of Agriculture, Food and the Environment, 2015. Information supplied by the Directorate General for Coastal and Marine Sustainability](#)

### Recommended websites:

<http://www.magrama.gob.es/costas/temas/proteccion-medio-marino/biodiversidad-marina/habitats-especies-marinos/default.aspx>

## Spanish Network of Marine Protected Areas (RAMPE)

Marine species included in the RAMPE (March 2014).



Source: Directorate General for Coastal and Marine Sustainability -MAGRAMA. MAGRAMA.

The RAMPE will be made up by protected spaces located in the Spanish marine environment, representing the natural marine heritage, regardless of the fact that the management and declaration thereof are regulated pursuant to international, community and state rules. Likewise, it is also possible to include those spaces whose management and declarations are regulated pursuant to regional rules in accordance with the provisions set forth in article 36.1 of Act 42/2007, of 13 December, on Natural Heritage and Biodiversity

Law 42/2007, of 13 December, on National Heritage and Biodiversity includes the international guidelines in terms of marine conservation and biodiversity and, in particular, creates the designation of Marine Protected Area (MPA) as one of the categories of national protected spaces. It also determines that MPAs are integrated with the Spanish Network of Marine Protected Areas (RAMPE).

Subsequently, Act 41/2010, of 29 December, on the Protection of the Marine Environment formally creates RAMPE, defines and determines the protected marine spaces integrated therein and under which conditions.

2011 saw the approval of Royal Decree 1599/2011, of 4 November, which established the criteria for the integration of Marine Protected Areas within the Spanish Network of Marine Protected Areas.

Throughout 2015 it is expected to include in the Network the 39 Areas of Special Protection for Birds which were declared in 2014 (Order AAA/1260/2014, of 9 July, by means of which Areas of Special Protection for Birds are declared in Spanish marine waters).



2.7

COASTS AND MARINE ENVIRONMENT

The need to prepare a Master Plan for the RAMPE is established by Article 29 of the aforementioned of Act 41/2010. The Master Plan shall be the basic instrument of coordination for achieving the objectives of the RAMPE and shall serve as a reference document in the actions the State and the Autonomous Communities must perform both as part of the Network and in particular in response to the requirements established at international and EU levels.

The Master Plan shall be drafted by Royal Decree and, in accordance with the regulations for environmental impact assessment and the Act on the Protection of Marine Environment itself; it must be submitted to an Environmental Assessment Process prior to implementation. It is expected that the Plan be approved and published by late 2015.

The RAMPE will devise a consistent and managed network of protected marine spaces in Spanish waters in order to ensure protection, conservation and recovery of the natural heritage and Spanish marine biodiversity

#### Definition of the Indicator:

The indicator presents the marine spaces included in the Spanish Network of Marine Protected Areas.

#### Source:

[Ministry of Agriculture, Food and the Environment, 2015. Information supplied by the Directorate General for Coastal and Marine Sustainability](#)

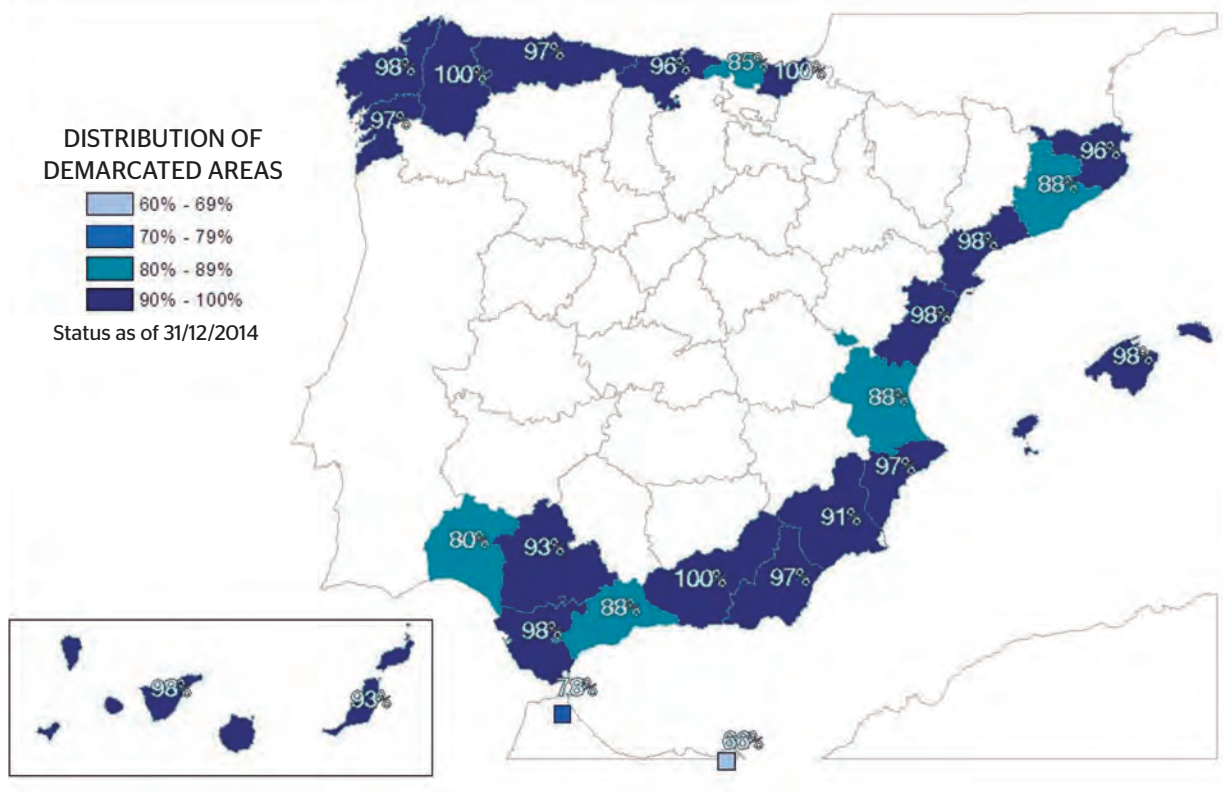
#### Recommended websites:

<http://www.magrama.gob.es/es/costas/temas/proteccion-medio-marino/biodiversidad-marina/espacios-marinos-prottegidos/red-areas-marinas-prottegidas-espana/red-rampe-index.aspx>



## Demarcated coastline

Percentage of demarcated coast length. Year 2014



Source: Directorate General for Coastal and Marine Sustainability. MAGRAMA.

Demarcation is the instrument established to determine the Public Maritime-Terrestrial Domain and is implemented by the General State Administration

In 2014, the Spanish coast was demarcated in 95.65% of its total length

On the 10<sup>th</sup> October 2014, the Royal Decree 876/2014 was issued with the approval of the General Regulation of Coastal Areas. The new regulation introduces modifications with the objectives, among others, of providing the demarcation with greater legal security, establishing technical criteria to demarcate the Public Maritime-Terrestrial Domain and establish greater guarantees for citizens both during the processing of the procedure and subsequent to its being finalized.

During 2014, 41,834 metres of new demarcation were approved, making 95.65% of the Spanish coast demarcated. The main objective is to rationalise coastal demarcation, determining the technical criteria to provide legal security for the definition of the public maritime-terrestrial domain and analysing the sections to be subject to revision.

The General Regulation of Coastal Areas introduces some important changes in the demarcation process, for the purposes of making registration obligatory and guaranteeing coordination between the administrations. Among these, the Directorate General for Coasts, the Property Register and the Directorate General of the Cadastre.





2.7

This coordination will guarantee legal security with which stakeholders, both public and private, can rely to ascertain if certain assets form part of the Public Maritime-Terrestrial Domain.

In accordance with that laid down in the coastal legislation, the Ministry of Agriculture, Food and the Environment carries out the demarcation Plan, processing and approving the files that define the demarcation line of the Public Maritime-Terrestrial Domain. The information on the demarcation line of the Public Maritime-Terrestrial Domain can be accessed through the Ministry's map viewer (<http://sig.magrama.es/dpmt/>).

**Definition of the Indicator:**

The indicator presents the length of the demarcated coastline by province and expressed as a percentage of the province's total coastline.

**Notes:**

The Ministry of Agriculture, Food and the Environment during 2014 launched a project which will be completed in 2015 and that will allow citizens to look up the demarcation line of the public maritime-terrestrial domain and the private land affected by the protection area easement on the maps of Spanish coastal areas or in the available aerial photographs. This information can be accessed in three different ways: through the Map Viewer of the Ministry (<http://sig.marm.es/dpmt/>), through the Cadastral Electronic Site of the Ministry of Economy and Finance (<http://www.sedecatastro.gob.es/>) or by accessing to the WMS Service of the Public Maritime-Terrestrial Domain. Following the amendment on the Act on Coasts, this information will be published in full on the electronic site of the MAGRAMA.

**Source:**

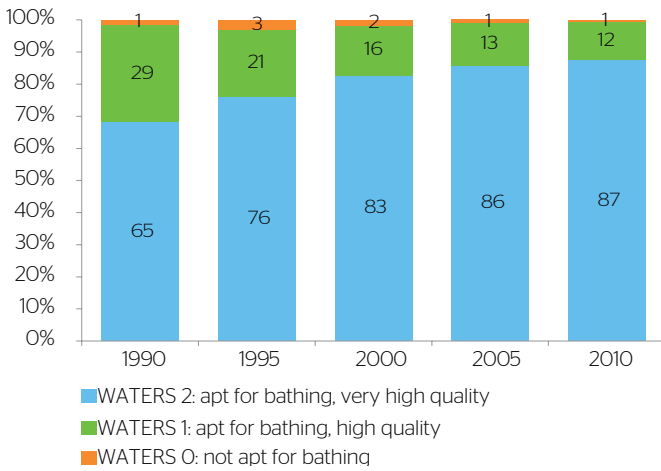
[Ministry of Agriculture, Food and the Environment, 2015. Information supplied by the Directorate General for Coastal and Marine Sustainability](#)

**Recommended websites:**

<http://www.magrama.gob.es/es/costas/temas/procedimientos-gestion-dominio-publico-maritimo-terrestre/>

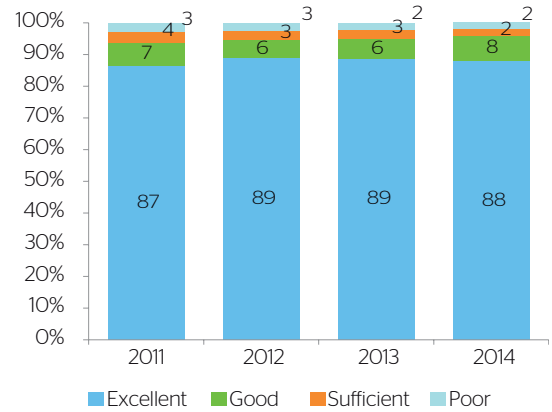


## Quality of coastal bathing water



## Quality of marine bathing waters

Percentage of sample points classified by quality categories



Source: MSSSI

2014 has been the year with the shortest bathing season since 2006 with 123 days on average

The duration of the bathing season varies between Autonomous Communities. In 2014, it lasted 123 days on average for maritime waters, the shortest since 2006. The longest was in 2009 at 142 days. The longest in 2014 was 274 days in the Canary Islands and the shortest 77 days in the Basque Country.

88% of marine bathing areas presented an excellent level of quality

In 2014 the same quality levels were maintained for coastal bathing waters as in previous years. Only one percentage point drop in the Excellent category was recorded while there was an increase of two percentage points in the Good quality category.

The "Quality of Bathing Water in Spain Report. Technical Report. 2014 Season", prepared by the Ministry of Health, Social Services and Equality analyses in-depth the quality of waters, classifying the sample points into the four ranges established by the applicable legislation.

Only 8 members of the coastal zone presented percentages of excellent water quality superior to that of Spain

For 2014, it establishes that 88% of the sample points present "Excellent" quality, 8% are classified as "Good", 2% as "Sufficient" and 2% as "Poor" quality.

| Quality of coastal bathing water. Year 2014                |      |            |      |
|--|------|------------|------|
| No. of sampling points according to their quality category |      |            |      |
| Excellent  | Good | Sufficient | Poor |
| 88   | 8    | 2          | 2    |

Source: MSSSI



Looking at Autonomous Communities, Ceuta, Murcia, the Canary Islands, Andalusia and the Balearic Islands showed percentages of "Excellent" sample points of above 90%. On the other hand, only five Autonomous Communities showed a sample point with "Poor" quality.

In the EU, 96.8% of the sample points in 2014 complied with the minimum quality requirements established by the Directive on bathing water, a percentage similar to that of 2013. 85.5% of the sample points met standards for "Excellent," 0.3 percentage points greater than in 2013 (85.2%). Only 1.7% of the coastal bathing water sample points were classified as "poor quality" (0.2 percentage points greater than in 2013).

13.2% of the coastal sample points of the EU were in Spain, a percentage only exceeded by Italy (33.0%) and France (14.1%). Only eight Member States showed percentages of water quality classified as "Excellent" greater than Spain's.

#### Definition of the Indicator:

The indicator presents the percentage of the total sample points included annually in the each of the quality ranges established by legislation, since 2011 there are four: "Poor" quality, "Sufficient" quality, "Good" quality and "Excellent" quality.

#### Notes:

- Directive 2006/7/EC governs quality management of bathing waters inside the European Union. In Spain, this aspect is regulated through the transposition of this directive into the Spanish legal framework by virtue of Royal Decree 1341/2007.
- Both the Directive and the Royal Decree classify the quality of bathing water as: "Poor" quality waters; "Sufficient" quality waters, "Good" quality waters and "Excellent" quality waters.
- In Spain, in the year 2014, 1,893 areas of bathing water were included. Of them, 223 were continental and 1,670 were marine. Of the 2,178 sample points taken during the 2014 season, 236 were from continental waters and 1,942 from marine waters.
- Of the 1,942 sample points located in maritime waters, only one of them (0.05%) did not provide samples, due to the beach's closure and the prohibition of bathing for the entire season. This was the same number as for the 2013 season.

#### Source:

[Ministry of Health, Social Services and Equality, 2015. Quality of Bathing Water in Spain. Technical report. Season 2014. Information on the website: Citizens / Public Health / Environmental and Workplace Health / Water Quality /Bathing Water / Publications / Quality of Bathing Water in Spain. Year 2014.](#)

#### Recommended Websites:

- <http://www.msssi.gob.es/profesionales/saludPublica/saludAmbLaboral/calidadAguas/aguasBanno/publicaciones.htm>
- <http://www.eea.europa.eu/publications/european-bathing-water-quality-in-2014>
- <http://nayade.msces/Splayas/home.html>



# GREEN 2.00 ECONOMY 00

The transition towards a low-carbon, innovative and sustainable is a challenge and a great opportunity in terms of economic growth, the generation of employment and well being. Innovation and the efficient use of resources play a decisive role in green growth. The business world cannot be at a distance and therefore in November 2014, more than 30 companies subscribed to the Declaration of Membership of the Spanish Group for Green Growth, thus formalizing the participation of the business sector in the *Green Growth Group*, an EU initiative set up in 2013.

the companies that have signed up to this declaration recognise the importance of the EU strategy on green growth to advance towards sustainable growth, with economic models oriented towards low carbon emissions through an energy-efficient economy. Among other commitments, companies must calculate their carbon footprint, establish quantifiable goals for reduction and periodically communicate advances and achievements obtained.

In 2010, the European Union's ten-year strategy for growth and employment "Europe 2020" was approved. It became a reference for overcoming the economic and financial crisis and also to address deficiencies in models for growth and to create the necessary conditions for smart, sustainable and inclusive economic growth. It proposes five principal interrelated objectives, relating to the areas of employment, research and development (R&D), climate change and energy, education and the fight against poverty and social exclusion, which the EU must reach by 2020.

In March 2014 the Commission published Communication COM(2014) 130 final, titled "Taking stock of the Europe 2020 strategy for smart, sustainable and inclusive economic growth" in which the Europe 2020 strategy is analysed four years after its launch. In conclusion it notes that the EU is on the way to meeting its objectives in the areas of education and climate and energy but not those relating to employment, research and development or poverty reduction. The Commission, after a public consultation process, will present in 2015 a series of proposals for the future of the Strategy.

### Energy intensity of the economy

- Spain shows an energy intensity for the economy below that of the EU-28 and in 2013 was the country with the seventh lowest intensity
- In the period 2000-2013 the energy intensity of the Spanish economy has been reduced by almost 20%
- Energy intensity is a form of assessing energy efficiency, as it analyses if economic growth can be achieved with lower energy consumption

### Organisations with Eco-Management and Audit Scheme (EMAS)

- As of December 2014, Spain has a total of 1,026 organisations registered with EMAS
- It was second among the EU-28 as for the number of organisations registered with EMAS: 31.3% of all organisations registered
- In terms of the number of organisations registered per capita, Spain was third with 23 organisations/million of inhabitants

### Environmental taxes

- In 2013, Spain contributed with 5.8% of all environmental taxes in the EU-28, occupying the sixth place among the 28 member states
- In relative terms, environmental taxes represented 1.83% of GDP in 2013, a percentage similar to that of 2006 and in excess of the 1.55 % of 2012
- Taxes associated with energy represented 85% of the total, while those of transport amounted to 13.8%

### Total material Requirement

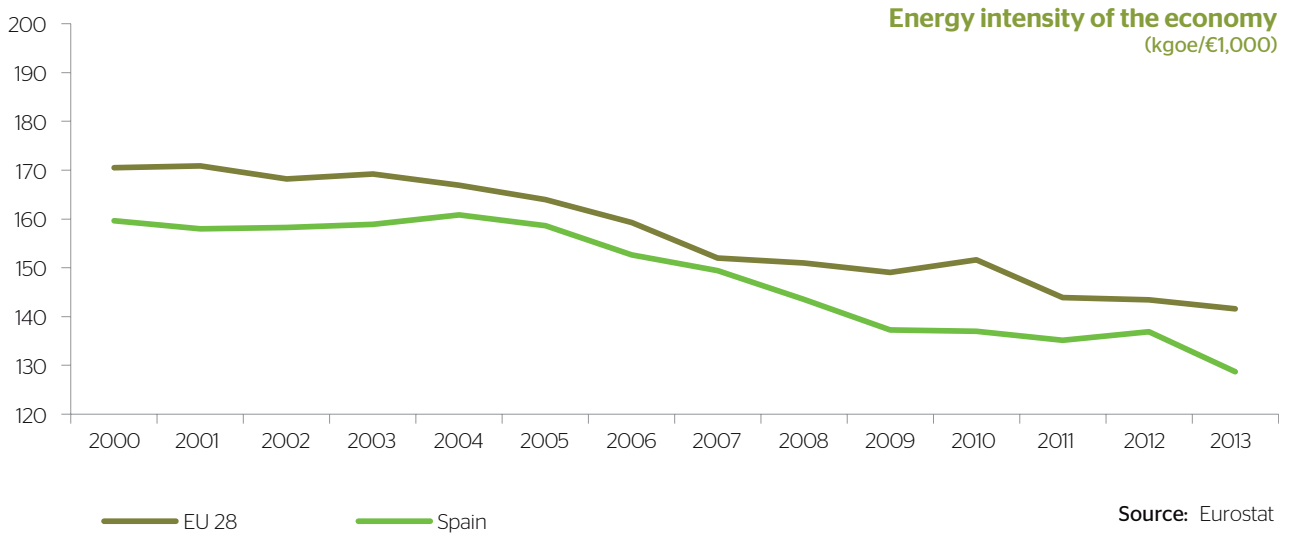
- Total Material Requirement (TMR) in Spain has been reduced by 50% between 2008 and 2012
- The productivity of TMR has grown 85% while energy intensity per GDP has fallen 46% and also 50% per capita.

### Renewable energy patents

- In the renewable energy sector, in Spain there have been 551 patent requests carried out between 2000 and 2013



## Energy intensity of the economy



Energy intensity is a way of assessing energy efficiency, as it analyses if economic growth can be achieved with lower energy consumption

In the period 2000-2013 the energy intensity of the Spanish economy has been reduced by almost 20%

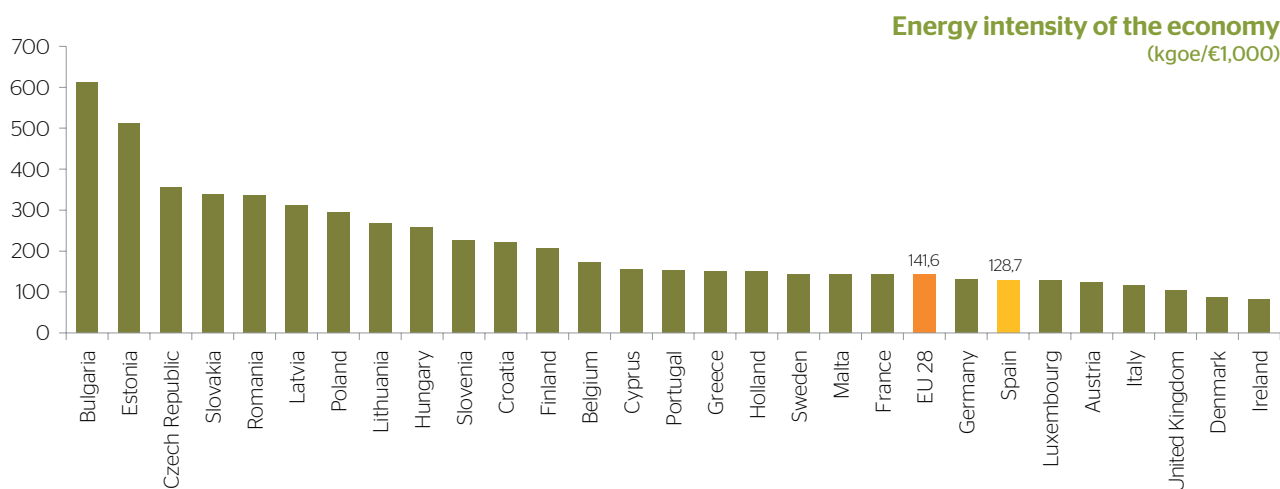
Spain shows an energy intensity for the economy below that of the EU-28 and in 2013 was the country with the seventh lowest intensity

In Spain, the energy intensity of the economy has presented a downward trend in recent years, which was particularly intense between the years 2004 and 2009. Analysis of the series from 1990 offers a scenario characterised by an initial period of stability up to 2004, in which annual average of intensity was 159 kgoe/1,000 Euros; a second stage dominated by the aforementioned drop between 2004 and 2009 (falling from 160.8 to 137.2 kgoe/1,000 Euros) and a final period of moderate decrease from 2009 to 2012.

The reduction in energy intensity produced in 2013 stands out, which was almost 6% in respect of 2012 intensity.

The significant drop recorded in the second phase (2004-2009) has its origins in the gross reduction of energy consumption (which was -76%) along with the drop in the growth of GDP (which only grew 8.2% in these years). These were the years prior to and at the centre of the economic crisis. From 2009 the reduction in intensity was more tempered, due to the slower decrease in energy consumption (-2.1%), combining, at the start of 2009, with diminishing GDP.

Between the years 2000 and 2013, this intensity has reduced in Spain by 19.4%, while in the EU-28 it has been to a lesser extent (reduction of 16.9%). Spain was, in 2013, had the seventh lowest energy intensity of the EU-28. This intensity was below the European average, consuming only 128.7 kgoe/1,000 Euros of GDP opposed to the 141.6 kgoe/1,000 Euros for the European average.



Source: Eurostat

**Definition of the Indicator:**

The relationship between gross domestic energy consumption and Gross Domestic Product (GDP). It measures the energy consumption of an economy and allows us to get an idea of its energy efficiency in general terms. This ratio is presented for the average of the countries of the EU-28 and for Spain, allowing for a comparison of both trends.

**Methodological Notes:**

The gross inland energy consumption is calculated through the sum of the gross inland energy consumption of five types of energy sources: coal, electricity, oil, natural gas and renewable energy sources. GDP figures are taken in chain-linked volumes referred to year 2005. This ratio is measured in kilograms of oil equivalent (kgoe) per 1,000 Euros.

**Source:**

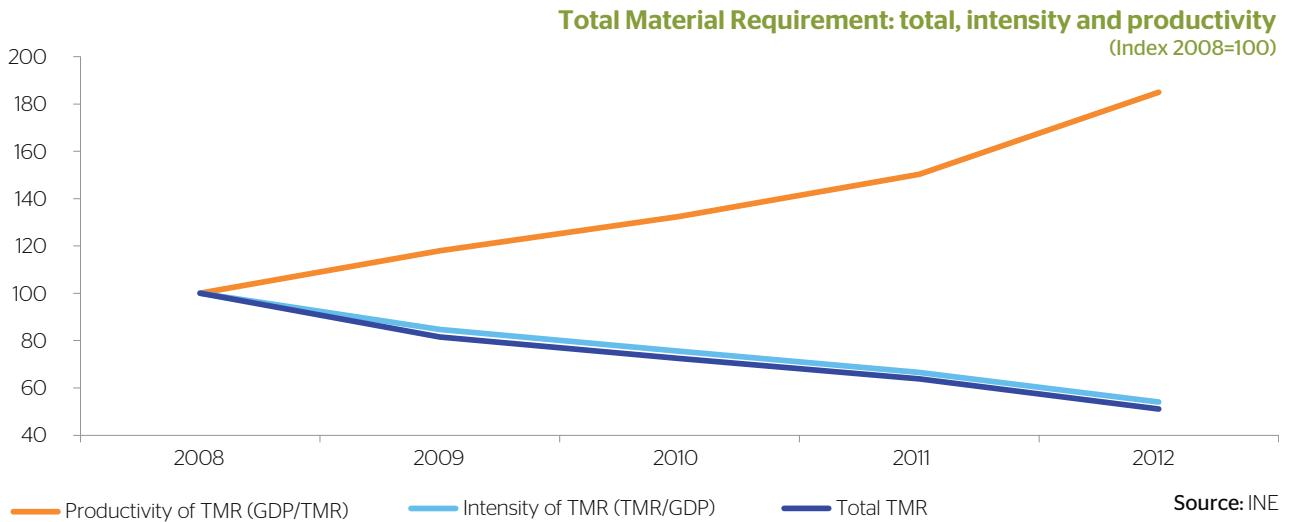
Eurostat. Information obtained from the website. Available at: [Statistics/Tables by subject/Environment and Energy/Energy/ Energy Statistics- Main Indicators/ Energy intensity of the economy \(tsdec360\)](http://ec.europa.eu/eurostat/data/database).

**Recommended websites:**

<http://ec.europa.eu/eurostat/data/database>



## Total material requirement



**Total Material Requirement (TMR) in Spain has been reduced by 50% between 2008 and 2012**

**The productivity of TMR has grown 85% while intensity by GDP has fallen 46% and also 50% per capita**

**In 2012 Spain was the second to last country in the EU-28 in total material consumption per inhabitant**

Total Material Requirement (TMR) represents the total quantity of materials used directly by the entire economy of the country: in 2012 it reached 414.0 million tonnes, 20% less than consumption in 2011 and 48.9% less in respect of 2008.

TMR productivity expresses the quantity of Gross Domestic Product (GDP) generated per unit of material consumption, and in this same period it registered growth of 84.9%. In 2011 alone it grew by 23.0%. Meanwhile, the intensity of TMR, calculated through the relationship between material consumption and Gross Domestic Product, describes the quantity of material required to consume in order to produce a unit of economic wealth. Between 2008 and 2012 this fell by 45.9% and in the last year by 18.7%. TMR intensity per capita (another form of measuring intensity) also fell significantly, by 49.6% for the same period.

These variables show an efficient behaviour in the consumption of resources used in productive processes, noting a progressive decoupling of use and economic growth over the period 2008-2012.

Of the total material consumed in 2012, the domestic extraction of materials represented 79% of the total (327.2 million tonnes, 22.7% below that of 2011). The Physical Trade Balance (calculated as the difference between imports and exports) represented the remaining 21% (with 86.8 million tonnes, a figure down 8.1% on the previous year).

It is worth highlighting that with this downward trend in TMR, exports of material only fell in 2009, growing from this year throughout the rest of the period. This increase in exports was accompanied by stability in imports due to weakness of domestic consumption, bringing about the drop in the trade balance and contributing to the drop in total TMR.



### Total Material Requirement and Intensity of Productivity in Spain

|   | 2008      | 2009      | 2010      | 2011      | 2012      |
|---|-----------|-----------|-----------|-----------|-----------|
| Total Material Requirement (1,000 tonnes)           | 810,644.5 | 660,515.5 | 587,361.8 | 517,696.8 | 413,989.2 |
| Intensity of TMR by GDP (tonnes per mullion Euros)  | 745.2     | 631.4     | 562.6     | 495.6     | 403.0     |
| Intensity of TMR per capita (tonnes per inhabitant) | 17.8      | 14.4      | 12.8      | 11.2      | 9.0       |
| Productivity of materials PIB/TMR (euros/t)         | 1341.9    | 1583.8    | 1777.4    | 2017.6    | 2481.7    |

Source: INE

In 2012 Spain was the second to last country in the EU-28 in total material consumption per inhabitant. Only Hungary, with 8.7 tonnes per inhabitant in 2012 showed a lower intensity than our country, which Eurostat placed at 8.9 t/inhabitant. On the other side of the spectrum was Finland with 33.4 t/inhabitant. Estimates for 2013 saw an improved position for Spain in the ranking, becoming, with 8.3 t/inhabitant, the country with the lowest TMR intensity per inhabitant.

#### Definition of the Indicator:

This indicator presents, in the form of an index (2008=100) the evolution of Total Material Requirement (TMR) and two of the principal ratios derived from it: DMC Productivity and DMC Intensity.

#### Methodological Notes:

- Total Material Requirement is the total quantity of materials used directly in the economy. The accounts of material flows show the physical material inputs that come into the national economic systems and the outputs to other economies or to the natural environment in physical units. National extraction covers the annual quantity of solid, liquid and gaseous raw materials (not including water and air) extracted from the natural environment to be used as material input in the economic system. It includes biomass, minerals and fossil fuels.
- Productivity of TMR: relationship between GDP and Total Material Requirement.
- Intensity of TMR by GDP: relationship between Total Material Requirement and GDP.
- Intensity of TMR per inhabitants: relationship between Total Material Requirement and population.

#### Source:

INE. Material flow Accounts. Information on the website: INEbase / Agriculture and the Environment / Environmental Accounts/ Results / Material Flow Accounts. Base 2008 / Series 2008-2012. Direct material flows and main indicators

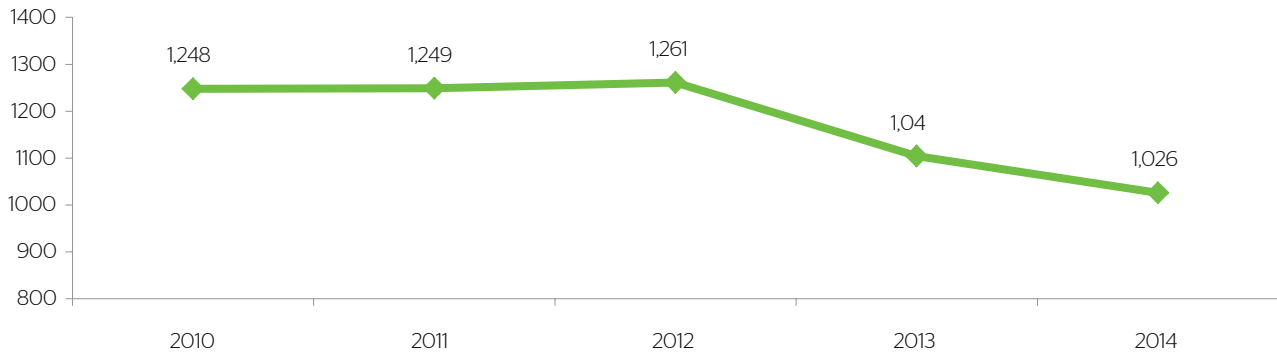
#### Recommended Websites:

- [http://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica\\_P&cid=1254735976603](http://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica_P&cid=1254735976603)
- <http://www.ine.es/prensa/np881.pdf>
- <http://ec.europa.eu/eurostat/data/database>



## Organisations with Eco-Management and Audit Scheme (EMAS)

### Number of Spanish organisations registered to EMAS



Source: MAGRAMA

As of December 2014, Spain has a total of 1,026 organisations registered with EMAS.

It was second among the EU-28 regarding the number of organisations registered with EMAS: 31.3% of all organisations registered

In terms of the number of organisations registered per capita, Spain was third with 23 organisations/million of inhabitants

Spain occupies the first place in the number of Organisations registered with the Community Eco-management and Audit Scheme (EMAS): as of December 2014 there were 1,026 Spanish organisations registered.

Spain represented 31.3% of all organisations registered in the EU-28.

In January 2015, Spain dropped to second place, with Italy overtaking it in terms of the number of organisation adhered to EMAS, with 1,078 organisations (representing 32.2% of the the total). Spain also occupied second place in the EU-28 in terms of number of sites.

Per capita, Spain occupied third position with 23 organisations registered per million inhabitants. Ahead of it were Cyprus and Austria, with 48 and 33 organisations per million inhabitants, respectively.

The review and updating of existing registers in the database, alongside the effects of the recession in the final two years, which caused the disappearance of a significant number of companies registered and many more adjusting their budgets, dispensing with the processes for renewal of their inclusion within EMAS are some of the causes of the reduction in the number of companies with EMAS registration. Nevertheless, this situation has been general across the EU, and thus Spain continues to rank among the top countries in the EU in terms of companies registered with EMAS.

The distribution by sectors of the companies registered in 2014 maintains the proportions of previous years. The services sector accounts for 67.6% of the total (slightly below the 2013 figure of 72.9%) and the manufacturing industry 25.6%, very close to the figure in 2013, amounting to (25.4%). On a different level, construction only accounted for 4.9% and agriculture for 1.5%. The extraction industry only provided 0.5%.

In the services sector, just three activities accounted for half of the organisations registered: hostelry, professional activities, science and technology and public administration and defence. The increase in hostelry is particularly noteworthy, with 14.2% the sector has increased by 5.8 the percentage of companies registered in 2013 (9.4%).



In just three Autonomous Communities (Catalonia, Galicia and Madrid) more than 60% of the organisations registered in Spain in 2014 can be found.

### Definition of the Indicator:

This indicator presents the number of organisations registered at the end of each year with the Community Eco-management and Audit Scheme (EMAS).

### Methodological Notes:

- The EMAS (Eco-Management and Audit Scheme), is a voluntary EU standard that recognises those organisations that have implemented an Environmental Management System and which have made a commitment to continuous improvement that is verified by means of independent audits.
- Royal Decree 239/2013, of 5 April, lays down the rules for the implementation of Regulation (EC) No. 1221/2009 of the European Parliament and of the Council, of 25 November 2009, on the voluntary participation of organisations in a community system of environmental management and auditing (EMAS). This Regulation repeals Regulation (EC) No. 761/2001 and Resolutions 2001/681/EC and 2006/193/EC of the European Commission. The State Secretariat for the Environment of the MAGRAMA will deal with the management of the EMAS Register of organisations with centres located in one or more third countries outside the EU, under a bilateral agreement with Spain to this end.
- The European EMAS website compiles information on a real time database, meaning the information on registered organisations at the end of each year must be consulted specifically at the time. The data corresponding to the EU-28 includes a number of organisations that registered on 7 January 2015 so the figure for the end of 2014 can be assigned with considerable accuracy.

### Source:

Data provided by the Directorate-General for Environmental Quality and Assessment and Natural Environment. MAGRAMA. The 2014 data refer to 1 December 2014.

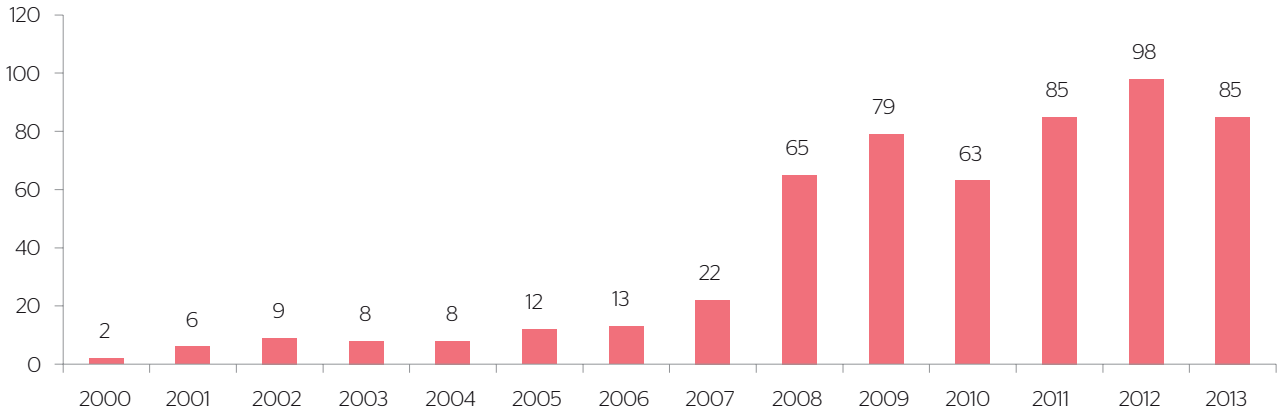
### Recommended Websites:

- <http://www.magrama.gob.es/calidad-y-evaluacion-ambiental/temas/sistema-comunitario-de-ecogestion-y-ecoauditoria-emas/>
- [http://ec.europa.eu/environment/emas/index\\_en.htm](http://ec.europa.eu/environment/emas/index_en.htm)
- [http://ec.europa.eu/environment/emas/registration/sites\\_en.htm](http://ec.europa.eu/environment/emas/registration/sites_en.htm)
- <http://ec.europa.eu/eurostat/data/database>



## Renewable energy patents

Number of European patent applications with Spanish origin within the renewable energies sector



Source: OEPM

In the renewable energy sector, in Spain there have been 555 patent requests lodged between 2000 and 2013

Between the year 2000 and 2013 there were a total of 555 European patent requests of Spanish origin in the renewable energies sector. Its growth in this period has been significant, growing from 2 patents requested in 2000 to 85 in the year 2013, after 98 in the year 2012.

In the period 2000-2013, requests relating to wind energy and solar energy were the most in demand, representing 44.1% and 43.2% of the total respectively. These two were followed then, at levels some way off, by ocean energy, representing 4.5%; conservation in construction, with 2.7%, and energy derived from waste management with 1.3%. Other sectors, with close to 4% of the total, were less significant in quantitative terms and were in and around 1%, although their importance is undeniable and their evolution is very interesting.

The distribution of requests for these kinds of patents by Autonomous Community presents a very irregular map. Of the 555 total requests for patents in the area of renewable energies requested for this same period, Navarra was the Autonomous Community with the most requests, with close to 24.9%. It was followed by Madrid and Catalonia with 16.2% and 15.1% respectively, Andalusia with 12.1% and the Basque Country with 9.9%. The remaining 14 Autonomous Communities and Cities together account for 14.8%.

According to the type of request, between 2000 and 2013, 54% of the requests published were in the name of companies and 35% by individuals. Just the remaining 12% corresponded to Public Bodies, including the University sector.

**Definition of the Indicator:**

This indicator quantifies the number of patent requests in the renewable energies sector carried out between the years 2000 and 2013. It offers data disaggregated by Autonomous Community and by sectors categorised as "renewable energies."

**Methodological Notes:**

- A patent is a title acknowledging an exclusive right to operate a patented invention, thus preventing others from manufacturing, selling or using it without the prior consent of the patent holder. As a counterpart, the patent is made accessible to the general public for general knowledge purposes.
- The following are regarded as renewable energies: biomass, CO<sub>2</sub> extraction and storage, waste energy, low CO<sub>2</sub> cement, methane extraction, conservation in construction, fuel-injection engines, wind energy, efficient lighting, hydraulic energy, and geothermal and ocean energy.
- The sample used to carry out the study of the European Patents in the renewable energies sector is the number of requests for European patents of Spanish origin, published in the period 2000-2013. The patents have been obtained taking into account the first title holder of the patent and they are involved in the sector of renewable energies, regardless of whether the classification given to the patent appears principal or secondary, that is to say, we include all patents in and around the Renewable Energy Sector.

**Source:**

Spanish Patents and Trademarks Office, 2014. "Inventions and Renewable Energies Period: 2000-2013. Spanish Patents and Trademarks Office (OEPM) Ministry of Industry, Energy and Tourism. Check the website: OEPM/Estadísticas/Estadísticas/Estudios Estadísticos

**Recommended websites:**

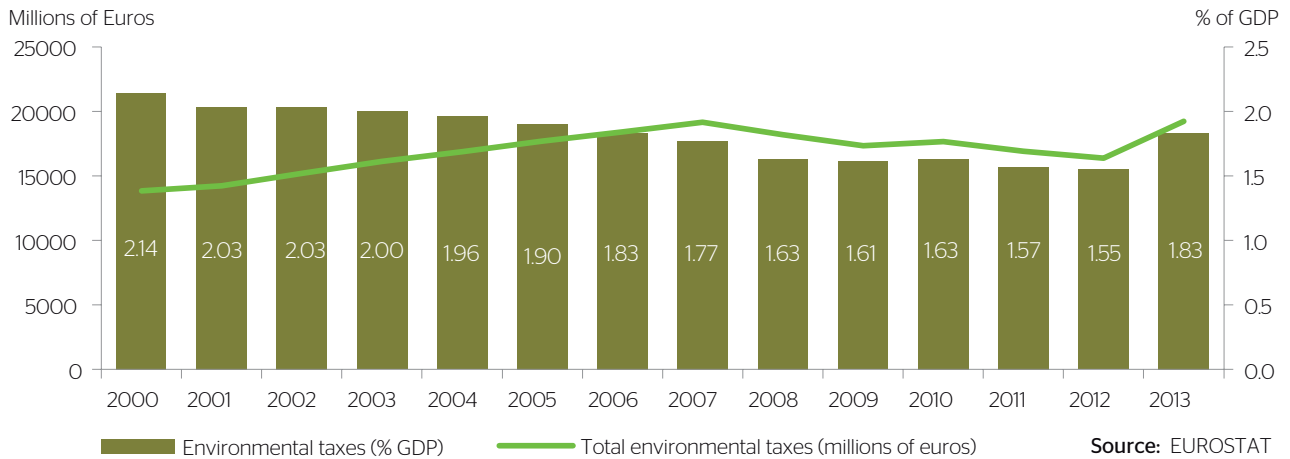
[http://www.oepm.es/sobre\\_oepm/actividades\\_estadisticas/estadisticas/estudios\\_estadisticos/index.html](http://www.oepm.es/sobre_oepm/actividades_estadisticas/estadisticas/estudios_estadisticos/index.html)





## Environmental taxes

### Environmental taxes in Spain Total and as a % of GDP



In 2013, Spain contributed with 5.8% of all environmental taxes in the EU-28, occupying sixth place among the 28

In relative terms, environmental taxes represented 1.83% of GDP in 2013, a percentage similar to that of 2006 and in excess of the 1.55 of 2012

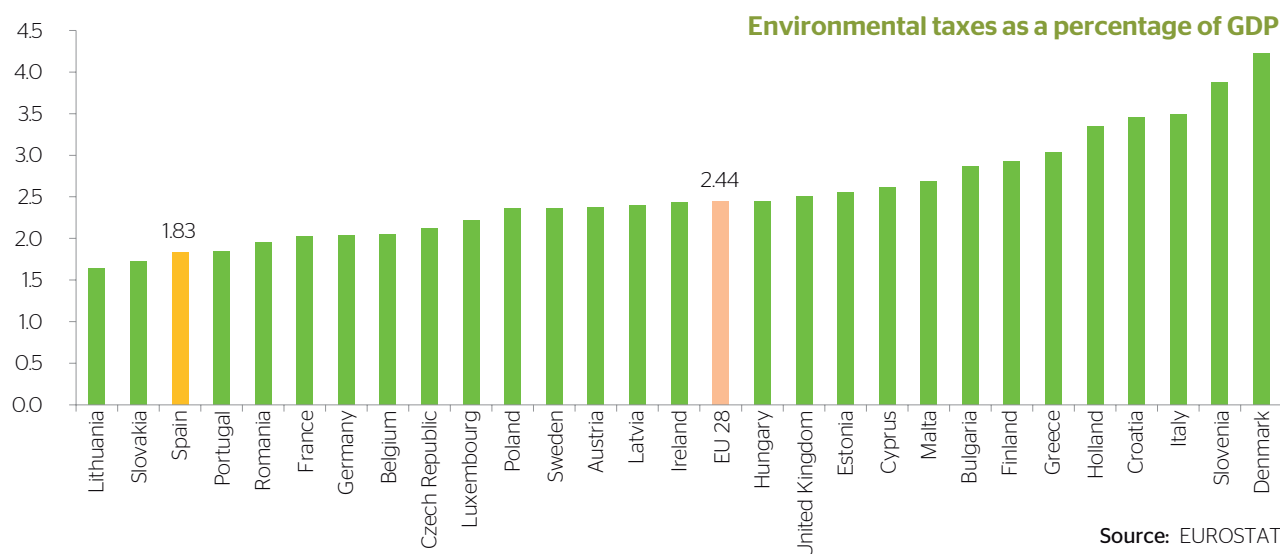
Taxes associated with energy represented 85% of the total and those for transport 13.8%

Revenues from environmental taxes, in absolute terms, present an upward trend from the year 2000 to 2007, the year in which, coinciding with the situation of global economic and financial crisis, we began to see a drop off in revenue. In 2013, this trend was reversed, with a significant increase of 17.6% registered. This year, Spain accounted for 5.8% of environmental taxes raised in the EU-28, occupying the sixth position behind Germany, Italy, the UK, France and the Netherlands.

Nevertheless, in relative terms, the measure of this revenue as a percentage of GDP had practically fallen ceaselessly since the year 2000, being one of the lowest in the EU. Only in 2013 there was an increase recorded to situate this variable close to the level it was at in 2006. Even still, in 2013 environmental taxes represented only 1.83% of GDP, a figure that puts Spain in third last place in proportional terms. This percentage is some way off the European average of 2.44% this year.

The "OECD Analysis of Environmental Findings for Spain 2015. Assessment and Recommendation," presented in March 2015, concludes that this environmental tax burden has been shrinking in a context where that for work has been increasing. It suggests the development of an environmental fiscal reform programme, whose application should be coordinated with the regional governments.

In the year 2013, figures provided by Eurostat on the distribution of the types of environmental taxes in Spain are in line with the average in the EU-28, energy and transport being the biggest contributors. Energy taxes in our country represented 85%, while transport reached 13.8%. Meanwhile, taxes associated with polluting processes and the use of resources made up 1.0% and 0.2% respectively. In the EU-28, presented as provisional estimates, taxes relating to energy represented 76%, with transport accounting for 20%, a percentage slightly above Spain's.



### Definition of the Indicator:

This indicator presents the annual value, expressed in millions of Euros and as a percentage of GDP, for revenue gathered through environmental taxes.

### Methodological Notes:

- Regulation (EU) No. 691/2011 of the European Parliament and of the Council, of 6 July 2011, on European environmental economic accounts, is the reference framework for the concepts, definitions, classifications and common accounting rules aimed at the preparation of Environmental Accounts and, for the first time, a module has been include in this account for annual transfer thereof.
- The Environmental Taxes Account is split into two end customers that are actually entitled to this tax rate: the activity branches and the household sector. Environmental Taxes 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. Among those, it is possible to find the following: Taxes on energy, Taxes on transport, Taxes on pollution and on resources. However, value added taxes are excluded from this definition.

### Source:

Information gathered from the Eurostat website. Available at: [Data / Database by themes / Environmenta and energy / Environment \(env\) / Environmental taxes \(env\\_eta\) / Environmental tax revenues \(env\\_ac\\_tax\)](#)

### Recommended Websites:

- [http://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica\\_P&cid=1254735976603](http://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica_P&cid=1254735976603)
- <http://www.ine.es/prensa/np876.pdf>
- <http://www.oecd.org/env/oecd-environmental-performance-reviews-spain-2015-9789264226883-en.htm>



# RESEARCH, DEVELOPMENT AND INNOVATION

In the last few years, significant changes have been applied in the scope of R+D+I at European, national and regional levels.

As regards the European Scope, the Association Agreement between Spain and the European Commission was executed at the end of 2014; besides, the Research and Innovation Framework Programme, the so-called Horizon 2020, was launched for the provision of funding throughout all phases of the innovation process. The Intelligent Development Operational Programme was approved, as well as several of the regional Operational Programmes; the remaining programmes are close to its final approval.

As regards the national scope, reference R&D&I instruments include the Spanish Strategy of Science, Technology and Innovation 2013-2020 and the National Plan for Scientific, Technical and Innovative Research 2013-2016, approved in February 2013 and which are regulated in the new Science, Technology and Innovation Act approved in 2011.

At a regional level, in 2014, the autonomous communities published their R&D&I regional strategies in the field of Smart Specialisation (RIS3) so as to comply with the previous condition (the so-called "ex-ante conditionality") for the financing of the funds provided under the terms of the ERDF Programme while laying the foundations *"...of a highly competitive regional market based on the Smart Specialization of the territories so as to organize within the different autonomous regions the social and economic development for which it is necessary to gather the capacity of the existing production fabric, the scientific potential of its agents and the boost to innovation as the engine for change and progress"*.

In 2015, autonomous communities will still devoting its efforts towards the consolidation of the aforementioned strategies, since they are a basic instrument for guaranteeing the contribution of the cohesion policy to the development policy of the European Strategy 2020 by means of the specialization in fields which are potentially competitive and generators of development within a global framework.





### Main bibliometric indicators in environmental sciences

- In 2013, Spain rose one position up to eighth place in the world ranking of scientific production within the area of environmental sciences.

### Public subsidies for R&D&I

- During the 2008-2013 period, the General State Administration funded 3,625 R&D&I actions including projects and human resources; funds amounted to 274.5 million Euros.

### Budget allocated to R&D&I in environmental programmes

- In 2015, environmental programmes represent 4.1% of the General State Budget for R&D&I.

### Public financing for R&D

- Public financing by means of final credits for the environmental socio-economic objective amounted to 3.9% in 2013.



## Main bibliometric indicators in environmental sciences

| Year | Number of documents | Number of citations per document. | International collaboration (%) | % worldwide | Word Ranking: |
|------|---------------------|-----------------------------------|---------------------------------|-------------|---------------|
| 2003 | 1,659               | 1,645                             | 35.3                            | 2.7         | 11            |
| 2004 | 2,037               | 2,021                             | 33.6                            | 3.1         | 10            |
| 2005 | 2,107               | 2,076                             | 36.3                            | 3.1         | 10            |
| 2006 | 2,719               | 2,680                             | 37.3                            | 3.3         | 10            |
| 2007 | 2,920               | 2,859                             | 37.3                            | 3.3         | 10            |
| 2008 | 3,386               | 3,337                             | 37.3                            | 3.7         | 10            |
| 2009 | 3,590               | 3,535                             | 38.4                            | 3.6         | 10            |
| 2010 | 4,014               | 3,931                             | 41.0                            | 3.8         | 10            |
| 2011 | 4,458               | 4,361                             | 44.1                            | 3.8         | 9             |
| 2012 | 4,766               | 4,644                             | 44.5                            | 4.0         | 9             |
| 2013 | 4,781               | 4,631                             | 48.1                            | 3.9         | 8             |

Note: consulted on May 2015

Source: SJR – SCImago Journal & Country Rank. Data compiled from SCOPUS.

In 2013, Spain rose one position up to eighth place in the world ranking of scientific production within the area of environmental sciences

The Spanish scientific production within the area of environmental sciences tripled in the last ten years from 1,659 documents in 2003 to 4,781 in 2013, which accounts for 4% of the total world production within such same area and around 6% of the total Spanish production.

In 2013, Spain ranked eighth in the world ranking of scientific production, rising one position in comparison to the previous years and three positions in the last ten years. Today, such ranking is led by the following countries: United States of America, China, United Kingdom, Germany, India, Canada and Australia.

Out of the total number of papers on environmental sciences published in Spain in 2013, 48.1% were published within the framework of an international collaboration, thirteen percentage points above the percentage of 2003 and four percentage points above the percentage of the previous year.

Regarding the categories comprising the area of environmental sciences, the ones with the highest production volumes are: "Environmental chemistry", "Ecology", "Pollution" and "Water Science and Technology". Regarding the development rate of the number of documents, the most significant ones are: "Global change", "Management, follow-up, policies and law" and "ecological modelling".

| Number of documents by category within the area of environmental sciences. |      |      |      |      |       |       |
|--|------|------|------|------|-------|-------|
| Year   | 2008 | 2009 | 2010 | 2011 | 2012  | 2013  |
| Ecological modelling   | 92   | 125  | 133  | 148  | 139   | 159   |
| Ecology  | 761  | 806  | 868  | 986  | 987   | 1,032 |
| Environmental chemistry  | 851  | 807  | 870  | 975  | 1,035 | 1,104 |
| Environmental engineering  | 547  | 613  | 679  | 725  | 899   | 711   |
| Environmental sciences (several)   | 435  | 482  | 601  | 650  | 767   | 787   |
| Global change  | 88   | 109  | 144  | 168  | 199   | 215   |
| Health, toxicology and mutagenesis   | 305  | 415  | 398  | 428  | 367   | 440   |
| Management, follow-up, policies and law                                    | 287  | 309  | 382  | 456  | 570   | 557   |
| Nature and landscape conservation  | 240  | 243  | 288  | 341  | 314   | 350   |
| Pollution  | 589  | 696  | 663  | 784  | 820   | 943   |
| Waste management and elimination   | 460  | 569  | 549  | 609  | 652   | 631   |
| Water science and technology   | 648  | 723  | 698  | 826  | 788   | 797   |

Note: consulted on May 2015

Source: SJR – SCImago Journal & Country Rank. Data compiled from SCOPUS.

### Definition of the Indicator:

The indicator shows the annual evolution from the year 2003 of the following bibliometric variables. Number of documents, number of citations per documents, international collaboration percentage, percentage of the Spanish production in relation to global production and position of Spain in the world's ranking.

### Methodological Notes:

- Number of documents: total number of documents published in journals indexed in SCOPUS.
- Citations per documents: Average number of citations received by the total volume of scientific production for a certain set of documents.
- Percentage of international collaboration: percentage of the production published in collaboration with institutions outside the country. For the calculation of this indicator those documents which include more than one institution and, at least one of them is from another country, are taken into consideration.
- Global percentage: percentage of the production of a country or institution in relation to the world's overall production within the same period and field.
- World ranking: position in the world ranking according to the production volume.

### Source:

Department of Metrics and Follow-up of R&D&I Policies. Spanish Foundation for Science and Technology. Ministry of Economy and Competitiveness. Prepared with data provided by SCImago Journal & Country Rank (SJR).

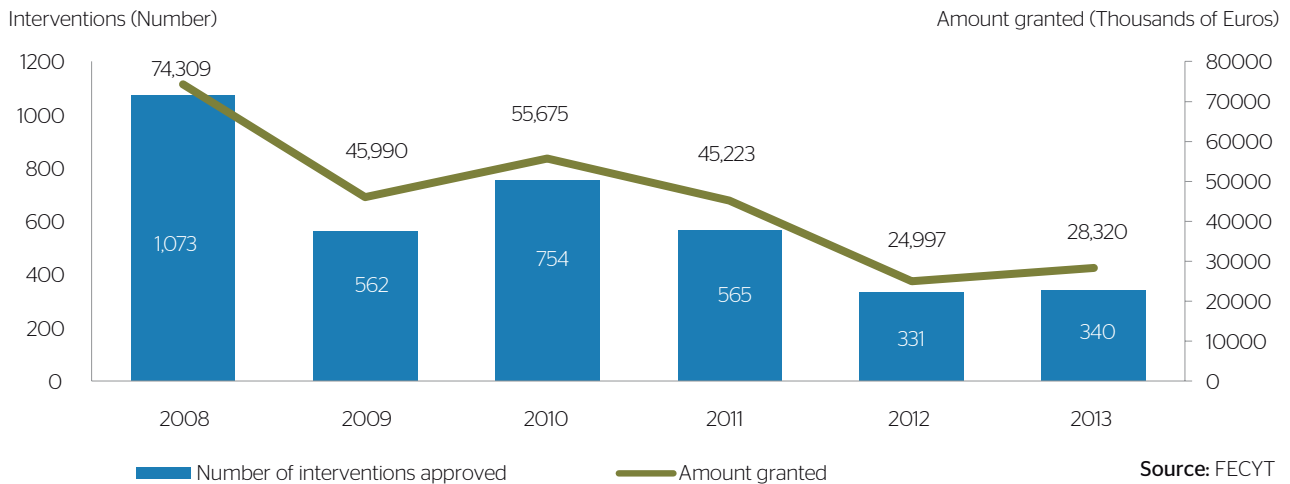
### Recommended Websites:

- <http://iconofecytes/Paginas/home.aspx>
- <http://www.scimagojr.com/>



## Public subsidies for R&D&I

### Number of actions approved and amount granted in R&D&I



The chart shows the evolution of the actions carried out in the strategic framework in which R&D&I activities of the General State Administration (GSA) for the environment have been developed.

It includes all actions and funds granted to the different programmes organised by:

- Ministry of Agriculture, Food and the Environment: R&D&I projects on energy and climate change 2008, Experimental development on the environment and eco-innovation 2008-2012 and Scientific research projects on the Network of National Parks in 2013.
- National Institute for Agricultural and Food Technology (INIA): Contracting of doctors specialising in agricultural and food research 2008, 2010 and 2013; Training of researching staff specialising in agriculture and food 2008, 2010, 2011 and 2012; Basic research projects on resources and agricultural technologies in coordination with the autonomous communities 2008-2012; Acquisition of scientific and technical infrastructure for the agricultural and food R&D centres attached to the INIA and to the autonomous communities 2008-2011 and Food Quality and Safety; Sustainable and Productive Agricultural Activity; Natural resources; Marine and maritime research in 2013.
- Centre for Energy, Environmental and Technological Research (CIEMAT): Training of research staff on energy and the environment in 2008-2012.
- “Experimental Development Projects on the Environment and Eco-Innovation 2009-2012” and “EEA Grants in 2013 on the Environment and Climate Change” of the Centre for Industrial Technological Development (CDTI).

During the 2008-2013 period, the General State Administration funded 3,625 R&D&I actions including projects and human resources; funds amounted to 274.5 million Euros

For the period 2008-2013, a total of 3,625 actions for the environment with an amount coming up to 274.5 million Euros were granted. In 2013, 340 R&D&I-related actions were carried out, with an amount coming up to 28 million Euros.

**Definition of the Indicator:**

The indicator shows the number of actions and the funding granted to the different programmes included in the strategic framework in which the R&D&I activities of the General State Administration were developed.

**Methodological note:**

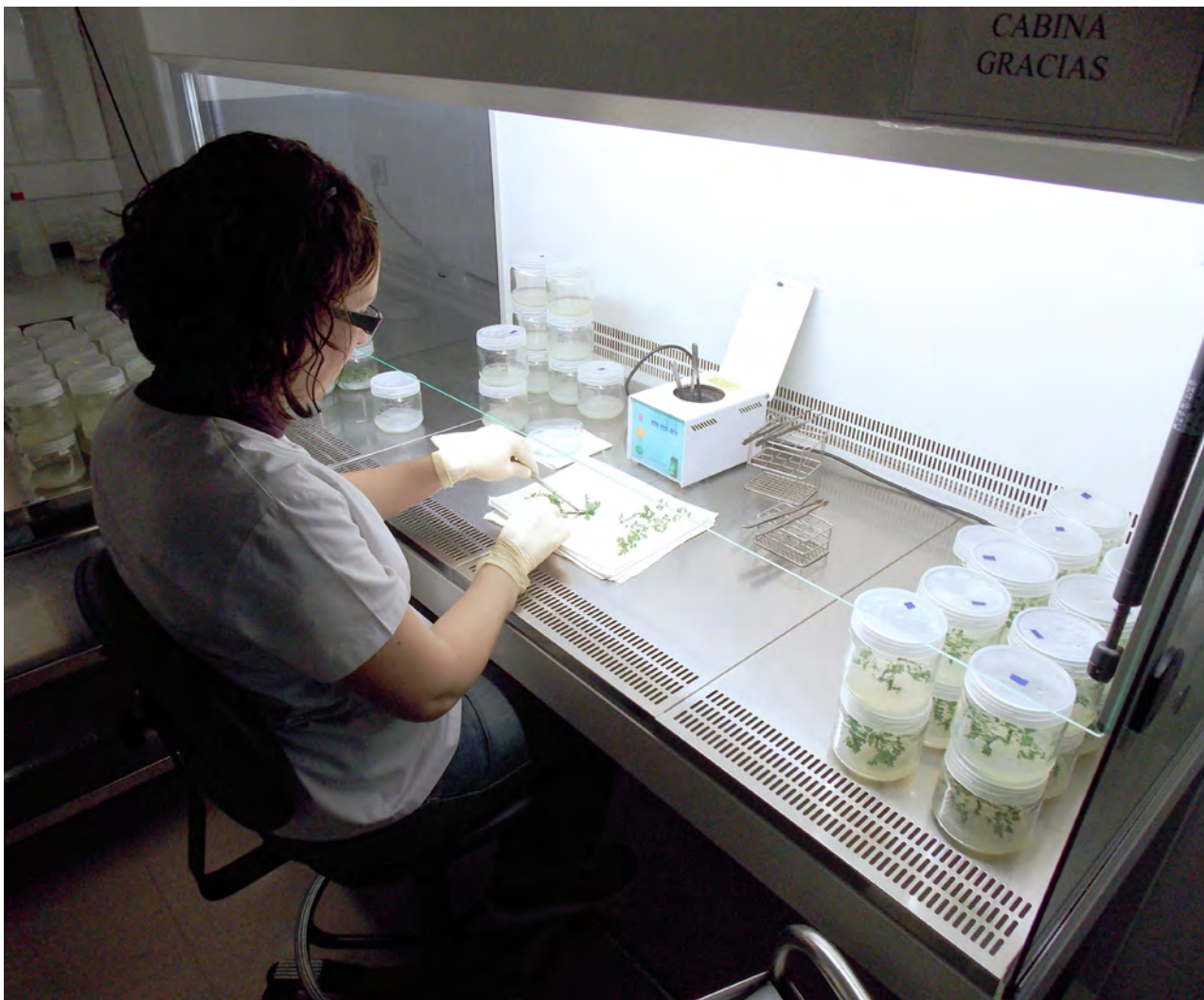
The amount of the actions corresponds to the multi-annual expenditure commitment.

**Source:**

Data provided by the Department of Metrics and Follow-Up of R&D&I Policies of the Spanish Foundation of Science and Technology from data provided by the different participating entities. Ministry of Economy and Competitiveness.

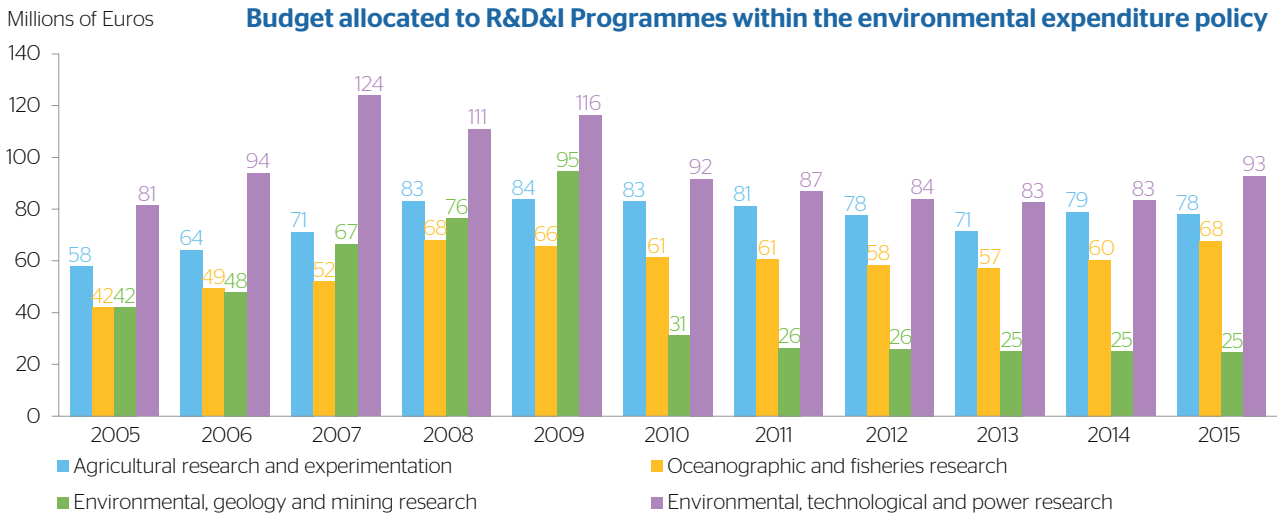
**Recommended websites:**

<http://iconofcytes/Paginas/home.aspx>





## Budget allocated to R&D&I in environmental programmes



Source: Ministry of Finance and Public Administrations, General State Budget

**In 2015, environmental programmes represent 4.1% of the General State Budget for R&D&I**

The indicator shows the evolution of the R&D&I Budget regarding the environmental programmes of the last ten years. Research on energy, the environment and technology is provided with a highest budget each year, followed by research and experimentation in the agricultural field.

Environmental research include the following Expenditure Policy Programmes no. 46: 467D Agricultural Research and Experimentation; 467E Oceanographic and Fisheries Research; 467F Environmental, Geology and Mining Research and 467H Environmental, Technological and Power Research. These four groups of programmes represented and overall 4.1% of the total R&D&I budget for 2015 with a slight increase of 0.11 percentage points in comparison to 2014.

**Definition of the Indicator:**

The indicator shows the annual budget for R&D&I activities according to the programmes established by means of environmental policies.

**Methodological note:**

Data consulted in January 2015.

**Source:**

[Data on the R&D&I Budget \(Expenditure Policy Programme no. 46\) provided by the Ministry of Finance and Public Administrations, General State Budget.](#)

**Recommended Websites:**

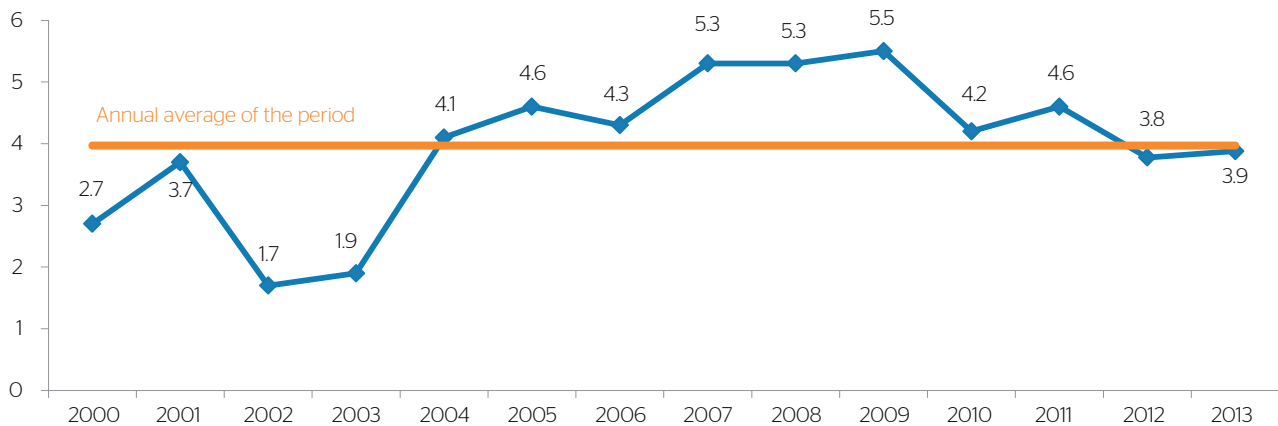
- <http://www.sepg.papminhap.gob.es/sitios/sepg/es-ES/Presupuestos>
- <http://iconofecytes/Paginas/home.aspx>





## Public financing for R&D

### Percentage distribution of final credits by environmental socio-economic objective



Source: Ministry of Economy and Competitiveness

The GBAORD Statistic (Government Budget and Appropriations or Outlays for R&D), carried out by the State Secretariat for Development and Innovation of the Ministry of Finance and Competitiveness, aims at the determination of those financing resources the General State Administration and the Autonomous Regions allocate to Research and Development activities.

Besides, it also aims at knowing those socio-economic goals governments base their R&D financing policies on; therefore, this statistic gathers those budgets identified by NABS socio-economic objectives (Nomenclature for the analysis and comparison of science budgets and programmes), official classification proposed by the European Union.

Its execution is framed within the statistical information requirements of the Organisation for Economic Cooperation and Development (OECD) and EU's Statistical Office (Eurostat).

3.9% of the total final credits by environmental socio-economic objective corresponded to the environment; such percentage has improved significantly during the last decade, when it represented 1.9% of the total distribution of final credits in 2003. On the other hand, the percentage distribution of these final socio-economic credits in 2013 shows that the "General progress of knowledge: financed with General University Funds (FGU)" is the most important socio-economic target, followed by the "General progress of knowledge: financed with other funds". Between the two of them they exceed 50% of final credits.

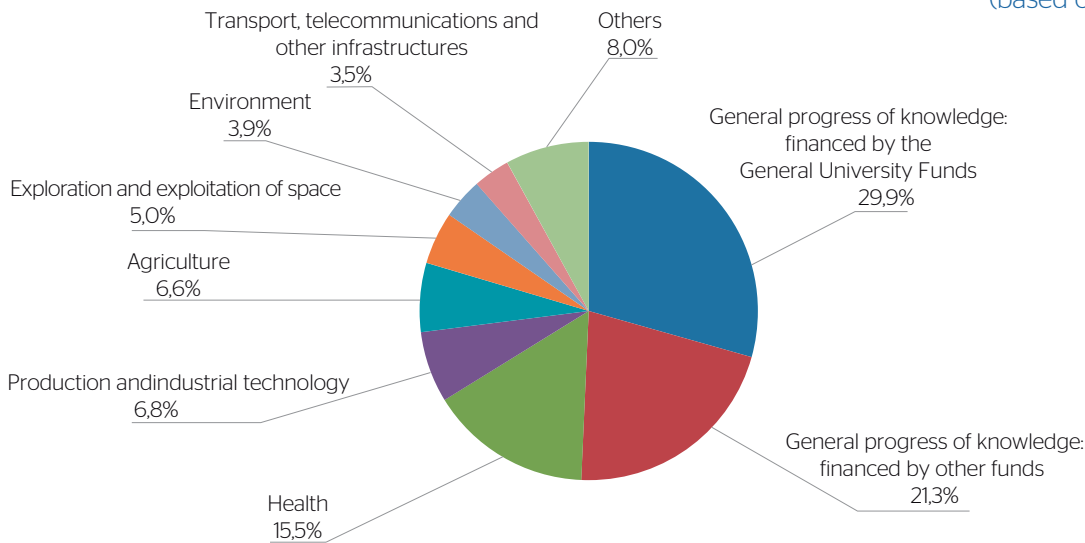
Public financing by means of final credits for the environmental socio-economic objective amounted to 3.9% in 2013



## Percentage distribution of final credits by environmental socio-economic objectives (based on NABS), 2013

2.9

RESEARCH, DEVELOPMENT AND INNOVATION



Source: Ministry of Economy and Competitiveness

### Definition of the Indicator:

The indicator shows the final budgetary credits for the environmental socio-economic target that Public Administrations allocate for R&D expressed in percentage points in relation to the total budget for R&D.

### Methodological note:

- The Public Financing for R&D&I known as GBAORD Statistic (Government budget appropriations or outlays for R&D), has the goal of determining the financing resources that the Public Administrations- central and regional- allocate for R&D activities by means of the identification of data made up of two stages: budgets approved by the corresponding Parliaments and Assemblies at the beginning of the budgetary year (initial credits) and final budgets, reviewed and approved during the budgetary year (final credits).
- The Spanish acronym NABS refers to the Nomenclature for the analysis and comparison of science budgets and programmes. It is organized by socio-economic targets.

### Source:

Ministry of Economy and Competitiveness. [Statistic on Government budget appropriations or outlays for R&D \(GBAORD\)](#).

### Recommended Websites:

- <http://www.idi.minecogobes/portal/site/MICINN/>
- <http://iconofecytes/Paginas/home.aspx>



# WASTE 2.10

During the year 2014, the implementation of Act 22/2011, of 28 July, on waste and contaminated soils continues, both regarding technical issues for the improvement of the regulations and development of the act and strategic aspects for waste policies. For such purpose, the processing of Royal Decree 180/2015, of 13 March, for the regulation of waste shipment within the State's territory and Royal Decree 110/2015, of 20 February, on waste of electrical and electronic equipment commenced; such Royal Decrees were finally approved in 2015.

Other aspects have also been developed; such aspects are related to market unity, the simplification and reduction of administrative burdens which include the development of a computer application for the Registry of waste production and management in electronic format common for the entire State; the Autonomous Communities are contributing to its development within the framework of a working group organised by the Waste Coordination Committee devoted to administrative simplification.

Regarding planning, several strategic lines for the development of waste management policies are being designed for the compliance with Community targets on waste management (preparation of reuse and recycling of 50% of urban waste and recovery of 70% of construction and demolition waste, as well as the target for the year 2016 on the reduction of the deposit of organic matter in landfills by 35% of the total amount of biodegradable urban waste generated in 1995). Likewise, compliance with the collection and management targets of waste of electrical and electronic equipment is also being boosted. These lines will be included in the State Waste Management Framework Plan.

During 2014, collaboration agreements have been signed with different associations for the promotion of the preparation for reuse and recycling, such as, for example:

- Plastic Waste (PLASTICS EUROPE): executed with the Plastics Europe Association devoted to the promotion of good practices and the conduction of comparative analysis of different ways of managing plastic waste.
- KOOPERA: for the boosting of the preparation of the reuse of waste (WEEE, textile, toys, furniture and other household waste), their reintroduction in the economic activity and the creation of social employment through such activities.

- Used cooking oils (FEHR-GEREGRAS): executed with the Spanish Federation of Hospitality and the Association of Cooking Oils and Fats Waste Managers for the achievement of a greater sustainability in the proper management of cooking fats and oils by turning them into a resource.

In 2014, subsidies were granted for the adaptation of recycling centres for the improvement of the separate collection of waste, in particular waste of electrical and electronic equipment, as well as subsidies for the promotion of domestic and community composting of organic matter.

### Urban waste generation

- With 449 kg/inhabitant, in 2013, Spain ranked fourteenth in the EU-28 regarding the generation of urban waste per inhabitant.
- In 2013, Spain accounted for 8.6% of the total waste generation within the EU-28, ranking fifth after Germany, France, the United Kingdom and Italy.
- The National Waste Prevention Programme 2014-2020, aims at the reduction as of 2020 of 10% in the weight of waste as compared to 2010.

### Treatment of urban waste

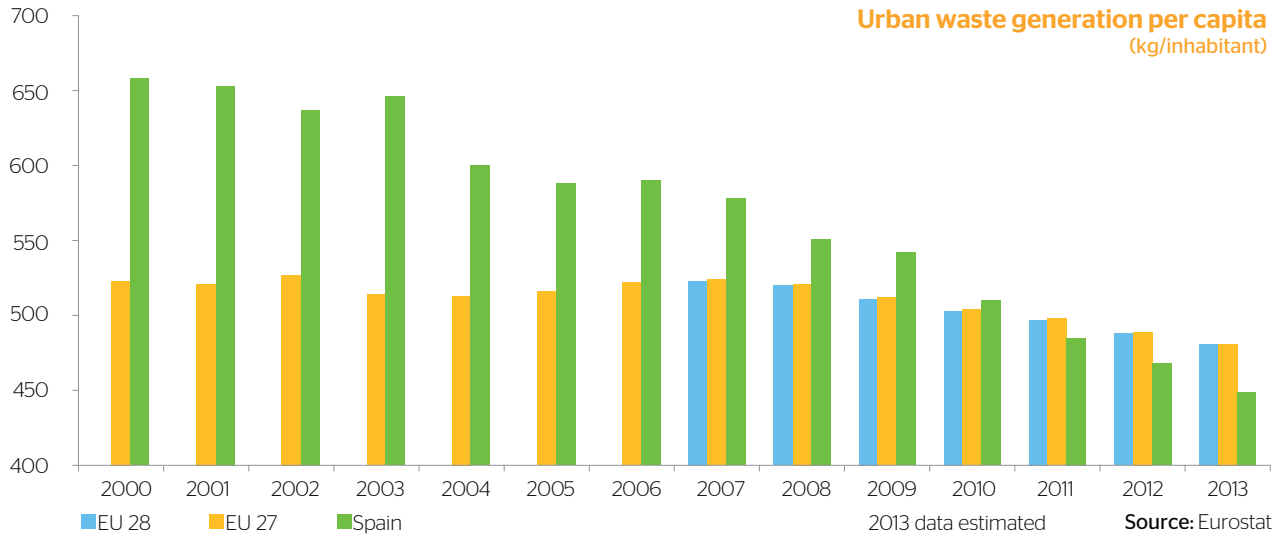
- During the last few years, the number of landfills decreased whereas the number of mechanical and biological treatment facilities as well as the number of facilities for the classification of packages and composting of bio-waste have increased.
- Recycling is the alternative in kg/inhabitant which has increased the most since 2000 (100% up to 2013).

### Recycling and recovery

- The recovery and packaging recycling rates amounted in 2013 to 73.3% and 66.6% respectively, thus complying with legal targets set for 2009. These targets were also met in 2006 and 2007 respectively.



## Urban waste generation



With 449 kg/inhabitant, in 2013, Spain ranked fourteenth in the EU-28 regarding the generation of urban waste per inhabitant

In 2013, Spain accounted for 8.6% of the total waste generation within the EU-28, ranking fifth after Germany, France, the United Kingdom and Italy

The National Waste Prevention Programme 2014-2020, aims at the reduction as of 2020 of 10% in the weight of waste as compared to 2010

Data regarding urban waste generation estimated for 2013 by Eurostat assign Spain a ratio of 449 kg/inhabitant. Therefore, the general downward trend of the last few years is maintained; between 2012 and 2013 there was a reduction by 4.1%.

During the period 2000-2013, this reduction in urban waste generation per inhabitant reached 31.8%, whereas in the EU-27 it has decreased to a lesser extent, just 8.0% due to the already lower generation.

Since 2011, Spain generates less waste per inhabitant than the EU. In 2013, this ratio in Europe amounted to an average of 481 kg/inhabitant both for EU-27 and EU-28. In 2013, Spain ranked fourteenth regarding waste generation per inhabitant and therefore there were thirteen countries with a higher generation rate.

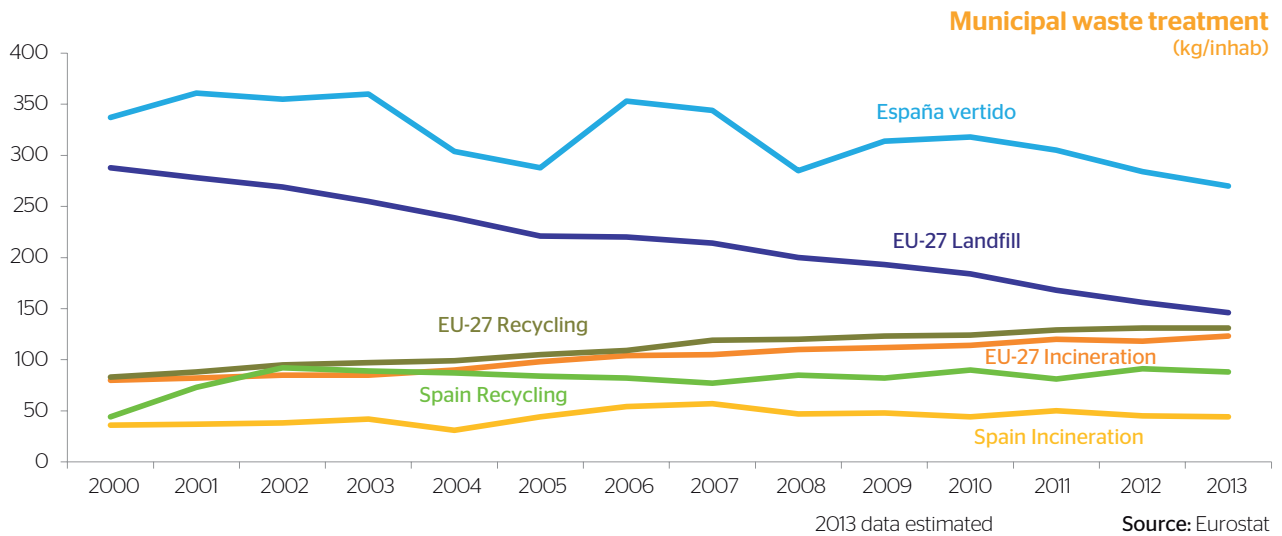
Regarding total waste generation measured in tonnes, in 2013, Spain accounted for 8.6% of the waste of the EU-28, with a decrease of 4.4% as compared to those generated in 2012. This decrease was higher than that of the average of the EU which amounted to 1.2% (both for EU-27 and EU-28).

The National Programme on Waste Prevention 2014-2020, together with regional and local programmes, as well as entrepreneurship prevention programmes and minimization plans, aims at reducing by 10% the weight of waste generated in 2010. The Programme is based on four strategic lines aimed at improving the key elements of waste prevention: reduction of the volume of waste, reuse and extension of its lifespan, reduction of the contents of harmful substances in materials and products and decrease of their impacts on human health and the environment.





## Urban waste treatment



During the last few years, the number of landfills decreased whereas the number of mechanical and biological treatment facilities as well as the number of facilities for the classification of packages and composting of bio-waste have increased

Recycling is the alternative in kg/inhabitant which has increased the most since 2000 (100% up to 2013)

During the last few years, there has been an improvement in the treatment of waste. This improvement means, in general, that there was a reduction in the number of landfills and an increase in the number of mechanical and biological treatment facilities and facilities for the classification of packages and composting of bio-waste. Besides, landfills and incineration plants are constantly being adapted to the new requirements established in Community regulations.

In 2013, according to provisional data by Eurostat, Spain ranked fifteenth in EU-28 as regards the volume of urban waste processed, with 449 kg/inhabitant, a ratio lower than that of the average of the EU-28, which was 470 kg/inhabitant.

By type of treatment, between 2000 and 2013, the volume of household waste recycled per inhabitant has experienced a major increase amounting to 100%, with 88 kg/inhabitant in 2013. Such increase is getting us closer to the figure of the EU-28, which that year amounted to approximately 130 kg/inhabitant.

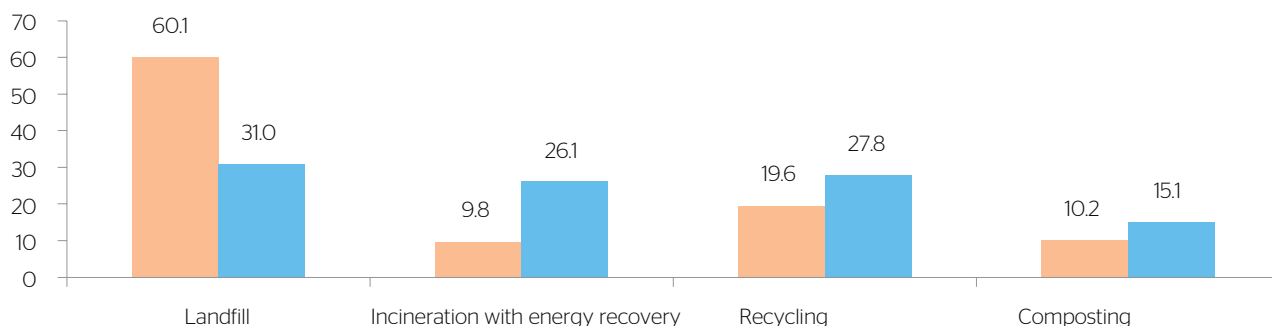
The treatment of urban waste by means of composting and anaerobic digestion remained in similar values, with a downward trend in the last four years amounting to 46 kg/inhabitant in 2013.

Incineration of household waste with energy recovery per inhabitant shows an upward trend coming up to 44 kg/inhabitant in 2013, which means an increase of 22.2% between 2000 and 2013, a value below that of the average of the countries of the EU-27, which was 53.8%.

The deposit of urban waste in landfills per inhabitant presents in Spain a downward trend. During the period 2000-2013, the volume of waste deposited decreased by 19.9%. In 2013, such volume amounted to 270 kg/inhabitant; the average of the EU-28 was 147 kg/inhabitant.



### Distribution of urban waste treatment per inhabitant, 2013 (%)



Spain

EU 27

2013 data provisional

Source: Eurostat

#### Definition of the Indicator:

The indicator shows the annual volume of urban waste processed per inhabitant, stating urban waste deposited in landfills, incinerated with energy recovery and those recycled.

#### Methodological Notes:

- The indicator shows urban waste generation expressed in kilograms per inhabitant (kg/inhabitant) and refers to waste collected by municipal services or by related services contracted by local councils. Most of this waste comes from households, although waste from similar sources, such as retail outlets, offices and public institutions, may also be included, according to the provisions of municipal regulations.
- Act 22/2011 defines “waste” as any substance or object that its owner throws away or has either the intention or obligation to throw away. “Domestic waste” is considered any waste generated in households as a result of domestic activities and those similar to the above generated by services and industries. This category includes waste from electrical and electronic equipment, clothing, batteries and accumulators, furniture and fittings, together with waste and rubble from minor building work and household repairs. Waste generated from the cleaning of streets, parks, recreational areas and beaches, dead domestic animals and abandoned vehicles will also be considered domestic waste.
- Data used corresponding to 2013 come from those published by Eurostat on its website and in the moment when the indicator was prepared are considered “estimations”, so it is likely that such data are subsequently corrected.
- In 2013 the number of Member States of European Union increased to 28 after the accession of Croatia. The complete series for all countries within this scope only includes the 2007-2013 period, which is why the analysis carried out refers to UE-27. However, those references for 2013 do include data regarding EU-28, since data for that country are available and already incorporated in the records of the European Union.

#### Source:

Eurostat. “Municipal waste generation and treatment, by type of treatment method (tsdpc240)”. Information gathered from the Eurostat website: [Eurostat/Data/Database/Tables by themes/Environment and energy/Environment/waste/waste streams/Municipal waste generation and treatment, by type of treatment method \(tsdpc240\)](http://ec.europa.eu/eurostat/data/database).

#### Recommended Websites:

- <http://www.magrama.gob.es/calidad-y-evaluacion-ambiental/temas/prevencion-y-gestion-residuos/>
- <http://ec.europa.eu/eurostat/data/database>
- <http://ec.europa.eu/eurostat/waste>



## Recycling and recovery

| Waste of recovered or incinerated packages in facilities for the incineration of waste with energy recovery, Year 2013 |                               |                              |   |                    |                   |
|--|-------------------------------|------------------------------|---|--------------------|-------------------|
| Materials  | Generated packaging waste (t) | Packaging waste Recycled (t) | Waste of recovered packaging with energy recovery (t) | Recycling rate (%) | Recovery rate (%) |
| Glass  | 1,343,638                     | 906,236                      | 938,677   | 67.6               | 69.96             |
| Plastic  | 1,305,579                     | 531,555                      | 764,155   | 40.7               | 58.5              |
| Paper and Cardboard  | 3,352,539                     | 2,514,372                    | 2,660,139   | 75.0               | 79.4              |
| Metals   | 404,767                       | 327,611                      | 327,611   | 80.9               | 80.9              |
| Wood   | 278,064                       | 178,876                      | 206,353   | 64.3               | 74.2              |
| Other  | 11,257                        | 0                            | 504   | 0.00               | 4.58              |
| <b>Total</b>   | <b>6,695,844</b>              | <b>4,458,650</b>             | <b>4,909,019</b>                                      | <b>66.6</b>        | <b>73.3</b>       |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

The recovery and packaging recycling rates amounted in 2013 to 73.3% and 66.6% respectively, thus complying with legal targets set for 2009. These targets were also met in 2006 and 2007 respectively

The recycling and recovery rate of packaging waste showed in the last few years an upward trend which is virtually constant.

In 1997, rates amounted to 34.0% and 37% respectively, whereas in 2013 they reached 66.6% and 73.3%.

In the year 2006, the global recovery target of 60% was exceeded and in 2007 the recovery target of 55% was also exceeded; both had been established for January 2009.

In 2013, Spain ranks eighth regarding the recovery rate for packaging waste among the 22 countries of the EU-28 which had supplied information as of October 2013 (provisional data subject to revision). Regarding the generation of packaging waste, Spain, with 143.6 kg per inhabitant ranked eleventh among the 22 countries with information as of that date.





| Global packaging waste recycling and recovery rate (%) |      |      |      |      |      |      |      |      |      |
|--|------|------|------|------|------|------|------|------|------|
| 2009 targets: recovery at 60%, recycling at 55%        |      |      |      |      |      |      |      |      |      |
|  | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| Recycling rate   | 50.4 | 54.0 | 56.3 | 59.1 | 60.3 | 61.9 | 64.4 | 66.5 | 66.6 |
| Recovery rate  | 56.1 | 60.7 | 62.1 | 65.4 | 67.8 | 70.0 | 72.1 | 73.0 | 73.3 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

### Definition of the Indicator:

Packaging waste recycling and recovery rate expressed in %.

### Methodological Notes:

- The recycling and recovery rate is calculated based on the tonnes recycled and energetically recovered in comparison to the total of packaging waste generated (assimilated into the packages placed in the market).
- Data on packaging waste refer to domestic, commercial and industrial packages. The goals of Act 11/1997, of 24 April, on Packaging and Waste Packaging and Royal Decree 252/2006 of 3 March reviewing recycling and recovery goals of the aforementioned Act, are:
  - A minimum volume amounting to 55% and a maximum of 80% of packaging waste by weight must be recycled.
  - Recycling of those materials contained in packaging waste:
    - 60% by weight for glass,
    - 60% by weight for paper and cardboard,
    - 50 % by weight for metals,
    - 22.5 % by weight for plastics (exclusively quantifying those materials that are turned into plastic again)
    - 15% by weight for wood.
  - Recovery (including recycling and incineration of waste with energy recovery) of a minimum of 60% by weight for packaging waste.

### Sources:

- Data provided by the General-Subdirectorate for Waste. Directorate-General for Environmental Quality and Assessment and Natural Environment. Ministry of Agriculture, Food and the Environment.
- Eurostat. "Recovery rates for packaging waste (ten00062) y Recycling rates for packaging waste (ten00063)". Information gathered from the Eurostat website: [Eurostat/Data/Database/Tables by themes/Environment and energy/Environment/waste/waste streams/ Recovery rates for packaging waste \(ten00062\) y Recycling rates for packaging waste \(ten00063\).](http://ec.europa.eu/eurostat/Data/Database/Tables%20by%20themes/Environment%20and%20energy/Environment/waste/waste%20streams/Recovery%20rates%20for%20packaging%20waste%20(ten00062)%20y%20Recycling%20rates%20for%20packaging%20waste%20(ten00063).)

### Recommended Websites:

- <http://www.magrama.gob.es/calidad-y-evaluacion-ambiental/temas/prevencion-y-gestion-residuos/>
- <http://ec.europa.eu/eurostat/data/database>
- <http://ec.europa.eu/eurostat/waste>
- <http://www.ecoembes.com>
- <http://www.sigrees>
- <http://sigfitoes>
- <http://www.ecovidrio.es/>



# AGRICULTURE 2.11

Agriculture is an integral part of the European economy and society. A significant drop in agricultural activity would result in reductions in GDP and in employment in related sectors of the economy, such as the agrifood sector. Other sectors would also be affected, from tourism to transport to local and public services related to activities in rural areas. This would accentuate the probability of mass rural exodus with serious consequences for society and for the environment.

The principal objectives of the Common Agricultural Policy (CAP) established in the Treaty of Rome (to increase production, ensure an equitable standard of living for the agrarian population and guarantee the security of supply at reasonable prices), have remained unchanged over the years. However, the continuous process of evolution and reform of the CAP has modified the structure of this policy with the objective of adapting to new challenges faced by the agricultural sector and to correct the quantitative inequalities that have been rising.

Current challenges relate to the production capacity of agriculture and its growing diversity, along with the demands of EU citizens in relation to the environment, the safety and quality of food, nutrition, health and animal welfare, issues of plant-health, preservation of the landscape and of rural environment and biodiversity, along with climate change.

In this sense, and to respond to new challenges, the "CAP Reform Horizon 2020" programme pursues the following strategic objectives:

- Preserve the potential of sustainable agricultural production, so as to guarantee food safety for European citizens in the long term and contribute to satisfying world food demand which, according to the FAO, must rise by 70% between now and 2050.
- Active management of natural resources, as agriculture performs a key role in the production of public assets, especially environmental ones such as the landscape, biodiversity in agricultural lands, climate stability and greater capacity to respond to natural disasters such as floods, drought and fires.
- Maintain viable rural communities, with the existence of a competitive and dynamic agricultural sector, with the capacity to attract young farmers.

Reform of the CAP must continue to strengthen sustainable, smarter and more inclusive growth in Europe's rural areas.



### Fertiliser consumption

- Consumption of fertilisers (as a commercial product) has risen 3.5% in the 2013/14 crop year
- Fertiliser production in Spain has fallen 9% in respect of the previous year, in the region of 4.2 million tonnes
- With 266.3 kg/ha, the Comunidad Valenciana had the highest consumption of fertilisers for the 2013/14 crop year

### Phytosanitary product consumption

- In 2013, the average use of phytosanitary products reached 2.7 kg of active ingredient per hectare.
- In 2013 use of herbicide grew 11.4% in respect of the previous year
- The Canary Islands, Murcia and the Comunidad Valenciana were the Autonomous Communities that registered the highest consumption levels for phytosanitary products in 2013.

### Organic farming

- Spain is the European Union country with the largest surface area dedicated to organic farming
- The surface area dedicated to organic farming fell in 2013, now measuring 1,610,129 ha. Of that, 83.4% is certified.
- In 2013, the number of operators producing organically grew by 980, reaching 33,704

### Organic livestock farming

- In 2013, the number of organic livestock farms fell overall by 4.8%
- The number of poultry farms grew by 25.3% in the last year
- Cattle farms, representing 48% of the total, fell by 6.8% in the last year

### Irrigated area

- In 2014, the irrigated area, in respect of the total agricultural area, reached 14.4%
- In absolute terms, Andalusia, with 28.7% of the total is the Autonomous Community with the most extensive irrigated agricultural area
- In relative terms, the Comunidad Valenciana, with 40%, is the Autonomous Community with the largest irrigated area as a proportion of total agricultural area

### Environmental efficiency in agriculture

- In the period 2000-2013, the economic rise of the agriculture sector was accompanied by a similar increase in the irrigated area and decrease in the use of phytosanitary products and fertilisers per hectare.



## Fertiliser consumption

| Fertilisers (consumption of tonnes) |         |         |         |         |         |
|-------------------------------------|---------|---------|---------|---------|---------|
| In commercial product               | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 |
| Simple nitrogenous                  | 2,060   | 2,455   | 1,994   | 2,396   | 2,585   |
| Simple phosphate                    | 101     | 206     | 196     | 157     | 167     |
| Simple potassium                    | 149     | 212     | 190     | 215     | 243     |
| Complex                             | 1,458   | 1,851   | 1,648   | 1,936   | 1,873   |
| Total fertilisers                   | 3,768   | 4,697   | 4,028   | 4,704   | 4,868   |
| In nutrients                        | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 |
| Total N                             | 812     | 956     | 821     | 983     | 1037    |
| Total P <sub>2</sub> O <sub>5</sub> | 330     | 371     | 340     | 377     | 427     |
| Total K <sub>2</sub> O              | 256     | 338     | 307     | 337     | 355     |

**Source:** MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

Fertiliser is practically an intrinsic part of agricultural activity, and represents one of the principal inputs in agricultural production, which is why its efficient use constitutes a source of saving and a reduction of pressure on the environment. Over-fertilisation, not adapted to the real needs of cultivation, whether due to quantity, type or time of application, can cause problems of eutrophication and nitrate leeching, and is an expenditure not compensated for by increased production. On the contrary insufficient fertilising can cause a reduction in the performance of cultivation and also a loss in soil fertility.

In Spain, consumption of fertilizers fell in crop year 2013/2014, encompassing July 2013 to June 2014, reflecting a consolidation of levels of use. The need to provide the soil with the necessary nutrients, along with benign climate conditions up until spring, saw fertilizer use rise in general terms in respect of the previous year. With this trend we are gradually approaching pre-2008 levels of consumption, which were in the region of 5 million tonnes of produce. In this respect, according to provisional data provided by the National Association of Fertiliser Manufacturers (ANFEE), in 2013/14 total use of fertiliser (as a commercial product) rose 3.5% on the the 2012/13 crop year and is on the way to recovering the levels that were the norm before 2008, when production reached 5.145 million tonnes, before the economic crisis struck, bringing with it a period of instability in production, sales and consumption of fertiliser.

Fertiliser production fell by 9% in respect of the previous year, in the region of 4.2 million tonnes. Nevertheless, imports rose 3.9% to account for more that three million tonnes while exports remained unchanged on the previous year at the level of around two million tonnes.

Fertiliser use (as a commercial product) increased by 3.5% overall during the 2013/14 crop year

Fertiliser production fell by 9% in respect of the previous year, in the region of 4.2 million tonnes



In this last crop year, consumption of potassium fertilisers grew by 13%, simple nitrogen fertilisers grew by 7.9%. Meanwhile, simple phosphate fertilisers grew by 6.4%, while complex fertilisers saw their use fall by 3.3%. On the other hand, the evolution in the consumption of different fertilising elements (in nutrients) shows an increase in all cases, although to varying extents. Phosphate fertilisers increased by 13.3% whereas nitrogen and potassium fertilisers increased by 7.7% and 5.3% respectively in the last crop year.

In terms of Autonomous Communities, use was very much linked to the level of technology and intensification of agriculture on the farms. In this regard, the Comunidad Valenciana, with consumption of 266.3 kg/ha was the region with the highest consumption levels during the last crop year, followed by the Canary Islands (201.9 kg/ha) and Murcia (195.2 kg/ha). The average consumption in Spain during the 2013/2014 crop year reached 120.3 kg/ha.

With 266.3 kg/ha, the Comunidad Valenciana had the highest consumption of fertilisers for the 2013/14 crop year

#### Definition of the Indicator:

This indicator studies the evolution of fertiliser consumption in Spain as a commercial product and by nutrients, and both as a whole and in terms of types: nitrogenous, phosphate and potassium.

#### Methodological Notes:

- The fertilisable area is defined as crop land (excluding fallow and other unoccupied land) and natural grasslands, according to the "Annual Statistical Agrifood Report 2014." of the Ministry of Agriculture, Food and the Environment.
- Fertilisers are those products used in agriculture or gardening which, due to their nutrient content, improve the growth of plants, increase their performance and improve the quality of crops; or that, thanks to their specific action, can modify -as appropriate- the fertility of soils or their physical, chemical or biological characteristics. This category includes fertilisers, special products and organic composts.
- The periods to determine the use of fertilisers correspond to the designated crop or farming year, which runs from July to June of the following year.

#### Sources:

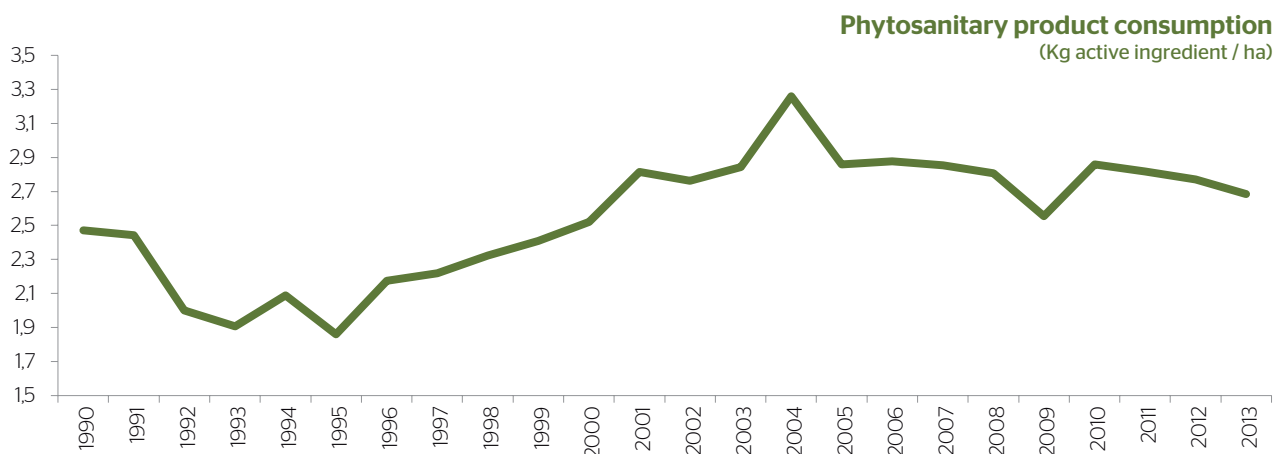
- [Ministry of Agriculture, Food and the Environment, 2014, Survey on Crop Areas and Yields General Technical Secretariat.](#)
- [National Association of Fertiliser Manufacturers \(ANFFE\).](#)

#### Recommended Websites:

- <http://www.anffe.com>
- <http://www.magrama.gob.es/calidad-y-evaluacion-ambiental/temas/productos-quimicos/fertilizantes/>
- <http://www.magrama.gob.es/agricultura/temas/medios-de-produccion/productos-fertilizantes/>
- <http://www.magrama.gob.es/estadistica/temas/publicaciones/anuario-de-estadistica/default.aspx>



## Phytosanitary product consumption



Source: Prepared by the authors using data from AEPLA and MAGRAMA

In 2013, average consumption of phytosanitary products reached 2.7 kg of active ingredient per hectare

In 2013, the use of herbicides was up 11.4% on the previous year

The Canary Islands, Murcia and the Comunidad Valenciana were the Autonomous Communities that registered the highest levels of phytosanitary products in 2013

The use of phytosanitary products in traditional agricultural production and in other systems (such as integrated agriculture or organic farming), is advisable when the potential effects of different plagues can compromise or negate the suitability of some lands in areas of great potential and of great social and economic interest.

The National Action Plan for the use of sustainable phytosanitary products, in accordance with Directive 2009/128/EC, establishes the objectives and measures to introduce sustainability criteria in the use of phytosanitary products for the period 2013-2017.

The evolution of the consumption of phytosanitary products (expressed in kg of active ingredient per hectare), shows us how in the last three years there has been a reduction in use, principally due to climactic conditions in the years in question. In 2013, the average consumption of phytosanitary products has decreased by 3.1% and reached 2.7 kg of active ingredient per hectare.

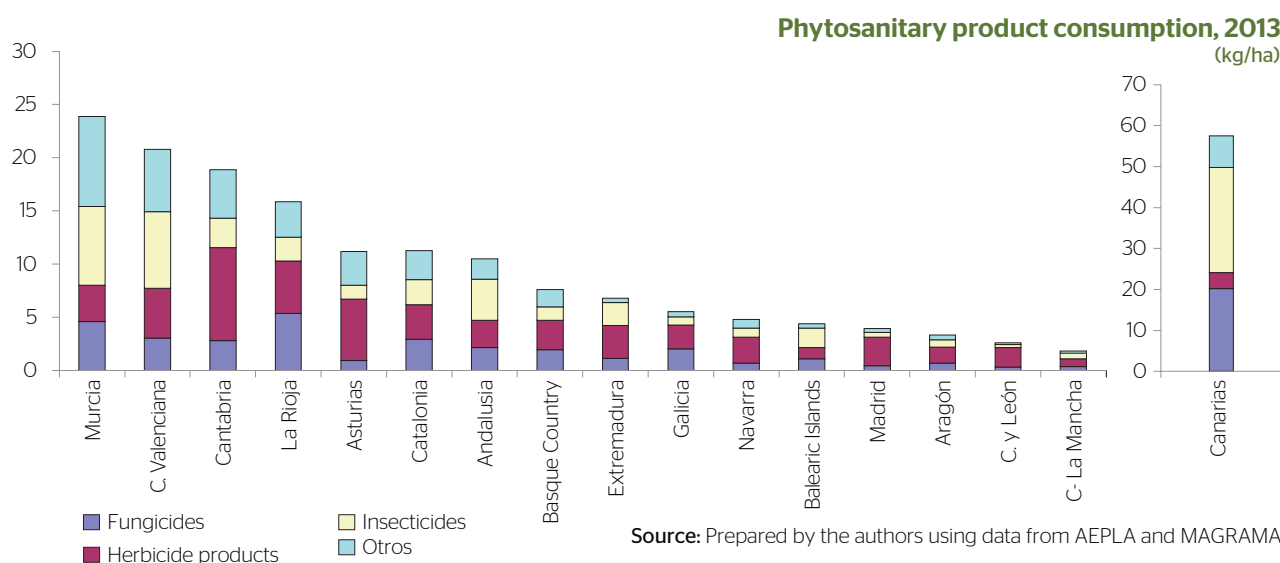
Based on the type of product applied, the distribution, of consumption in 2013 was 31.1% for herbicide products, followed by insecticide, nematocides and acaricides with 29.6%, fungicides with 20.1% and the remaining forms with 19.2%. Unlike the previous year, in 2013 use of herbicides saw an increase of 11.4% year on year, while insecticides and fungicides fell 2.4% and 3.1% respectively.

With regard to the distribution by Autonomous Communities of consumption per hectare of the main groups of phytosanitary products, in 2013 the Canary Islands topped the list with 57.5 kg/ha, followed by Murcia (23.9 kg/ha) and the Comunidad Valenciana (20.8 kg/ha). Meanwhile, the Autonomous Communities with the lowest levels of use were Castilla-La Mancha (1.8 kg/ha), Castilla y León (2.6 kg/ha) and Aragón (3.3 kg/ha).



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### Definition of the Indicator:

The indicator presents the evolution of use of phytosanitary products per active ingredient per hectare in Spain, as a whole and in terms of groups: herbicides, insecticides, fungicides, etc.

### Methodological note:

For the calculation of the indicator, 'area treated with phytosanitary products' is understood as the total area of arable land, excluding fallow and other unoccupied land (i.e. the area devoted solely to herbaceous and ligneous crops).

### Sources:

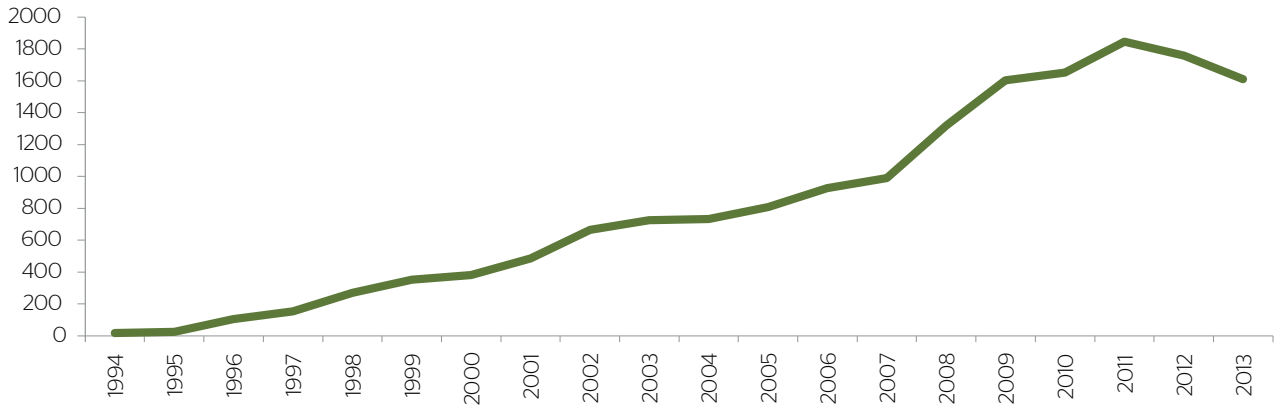
- [Phytosanitary products: Trade Association for Plant Protection \(AEPLA\)](#)
- [Treated areas: Survey on Crop Areas and Yields \(ESYRCE, Spanish Acronym\), 2012. Ministry of Agriculture, Food and the Environment.](#)

### Recommended Websites:

- <http://www.magrama.gob.es/es/agricultura/temas/>
- <http://www.aepla.es>
- <http://www.magrama.gob.es/es/estadistica/temas/estadisticas-agrarias/agricultura/esyrce/>
- <http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/productos-quimicos/fitosanitarios/>
- <http://www.magrama.gob.es/es/agricultura/temas/sanidad-vegetal/productos-fitosanitarios/fitos.asp>
- <http://www.magrama.gob.es/es/estadistica/temas/publicaciones/anuario-de-estadistica/default.aspx>

## Organic farming.

### Number of organic livestock holdings



Source: MAGRAMA

Spain is the European Union country with the largest surface area dedicated to organic farming

The area dedicated to organic farming fell in 2013, dropping to 1,610,129 ha. Of that, 83.4% was certified

The organic sector in Spain has, since its birth in 1989, has grown steadily in terms of area, and type of cultivation and volume of production. In spite of the growth in the area of organic farming, the year 2012 represents a turning point, when a statistical adjustment was made to adapt to the categorisation used by *Eurostat*. Spain remains in first place in the EU in terms of area dedicated to organic farming.

According to data compiled in the report "*Organic Farming in Spain. Statistics 2013*", the area dedicated to organic farming has experienced a slight decline in last two years. In 2013 the total organic area reached 1,610,129 ha, 8.3% less than the previous year in which the total surface area was 1,756,548 ha. Of the total area, 1,342,735 ha were certified (83.4% of the total), while only 180,577 ha were in conversion (11.2% of the total) and 86,816 ha in the first year of activity (5.4% of the total). This is a very relevant aspect in terms of the evolution of production and consolidation of the organic sector.

When we look at the Autonomous Communities, Andalusia, with 50.1% of the total area, or 806,726 ha, was the region with the largest area devoted to organic farming, followed by Castilla-La Mancha, with 16.9% (290,423 ha), Catalonia, with 4.4% (77,401 ha) and Extremadura with 4.2% (74,294 ha).

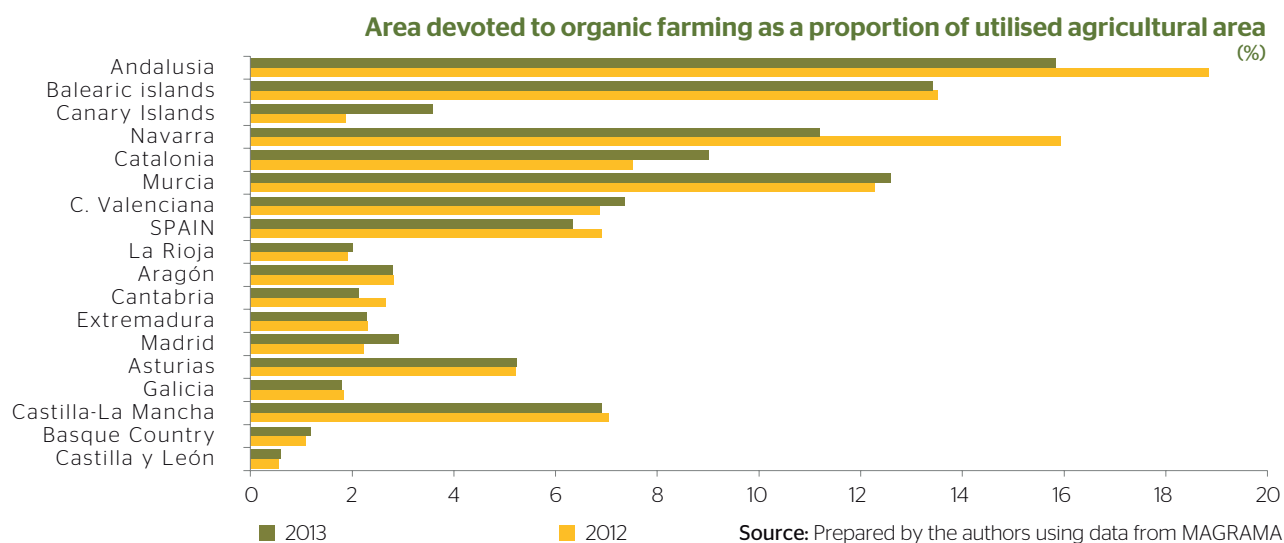
Despite this drop in the total surface area dedicated to organic farming in the past year, several Autonomous Communities have seen significant increases, with Catalonia (18.7%) and Madrid (30.4%) and, above all, the Canary Islands standing out in this regard. On the other hand, Navarra and Cantabria, with decreases of 29.9% and 20.6% respectively, were the regions which saw their surface area reduced to the greatest extent.

In 2013, the number of organic producers (primary activity) remained at a similar level to 2012 (reaching 30,502 operators). Similarly, the number of producers and/or processors (secondary activity) reached 2,842.

In term of the distribution by type of crop in 2013, the area dedicated to pastures and meadows accounted for 47% of the total (757,664.4 ha), that dedicated to permanent cultivation 30.4% (490,030 ha), cultivation of arable land 15.1% (243,846 ha) y vegetable growing 0.5% (8,794 ha). In 2013, the percentage of the area left fallow was 6.8% (109,794 ha).

In 2013 the number of operators producing organically grew by 980, reaching 33,704





With regard to utilised agricultural area (UAA), Spain occupied twelfth position in the EU-28 for 2012, with 7.5% of its UAA dedicated to organic farming, a percentage which was above the EU average of 5.7%, with Austria in first place with 18.6%, followed by Sweden with 15.8%. In terms of Autonomous Communities, Andalusia (15.8%), the Balearic Islands (13.4%), Murcia (12.6%) and Navarra (11.2%) had the largest areas in 2013 devoted to organic farming as a proportion of UAA.

### Definition of the Indicator:

This indicator describes the evolution of the area dedicated to organic agricultural production.

### Methodological Notes:

- The Utilised Agricultural Area (UAA) is estimated through the sum of all cultivation lands and permanent meadows and pastures. The data is taken from the "Survey on Areas and Crop Yields" (ESYRCE)".
- The legislative framework governing organic farming in Spain since 1989, the Regulation on Generic Organic Labelling and, at European level, Regulation (EC) no. 834/2007 of 28 June 2007, on organic production and labelling of organic products, which repealed Regulation (ECC) 2092/91 [Official Journal of the EU 20/07/2007].
- The types of organic farming included in the Organic Farming Statistics Report have seen some modification. Until 2011, the section for "other areas" was included in the report, but since 2012 these are left out, so as to be consistent with Eurostat data. According to the Eurostat definition, section "6 Other Areas (Specific Cultivation)," areas corresponding to the following are included: Forest land and wild plants (not for livestock use), damask rose, Christmas trees and other areas not included elsewhere.

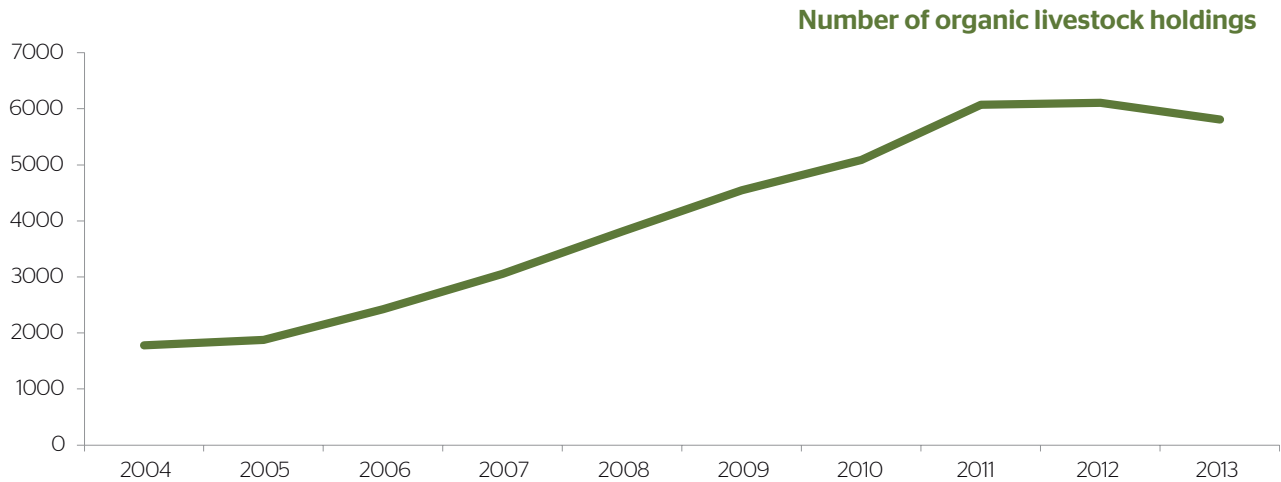
### Sources:

- [Ministry of Agriculture, Food and the Environment, 2014. Organic Farming Statistics 2013. Sub-directorate General for Differentiated Quality and Organic Farming](#)
- [Ministry of Agriculture, Food and the Environment, 2014. Survey on Crop Areas and Yields General Technical Secretariat.](#)

### Recommended websites:

<http://www.magrama.gob.es/alimentacion/temas/la-agricultura-ecologica/>

## Organic livestock farming



Source: MAGRAMA

Organic livestock farming is a sustainable system of animal production that is safer and more respectful of animal welfare. In this system, animal growth is not forced by including genetically modified ingredients and those grown with fertilisers and/or chemical pesticides, nor are antibiotics or antiparasitics used. In this system, animal production is based on managing indigenous breeds and those in danger of extinction along with the rigorous selection of same, fostering local production in such a way to serve as an economic and business stimulus in rural areas.

The report "*Organic Farming in Spain. Statistics 2013*" by MAGRAMA, establishes that the number of organic livestock holdings was 5,808 in 2013, some 4.8% less than the previous year when the peak for the 2004-2013 season was reached at 6,104 holdings.

In 2013, the number of organic livestock farms fell overall by 4.8%

The number of poultry farms grew by 25.3% in the last year

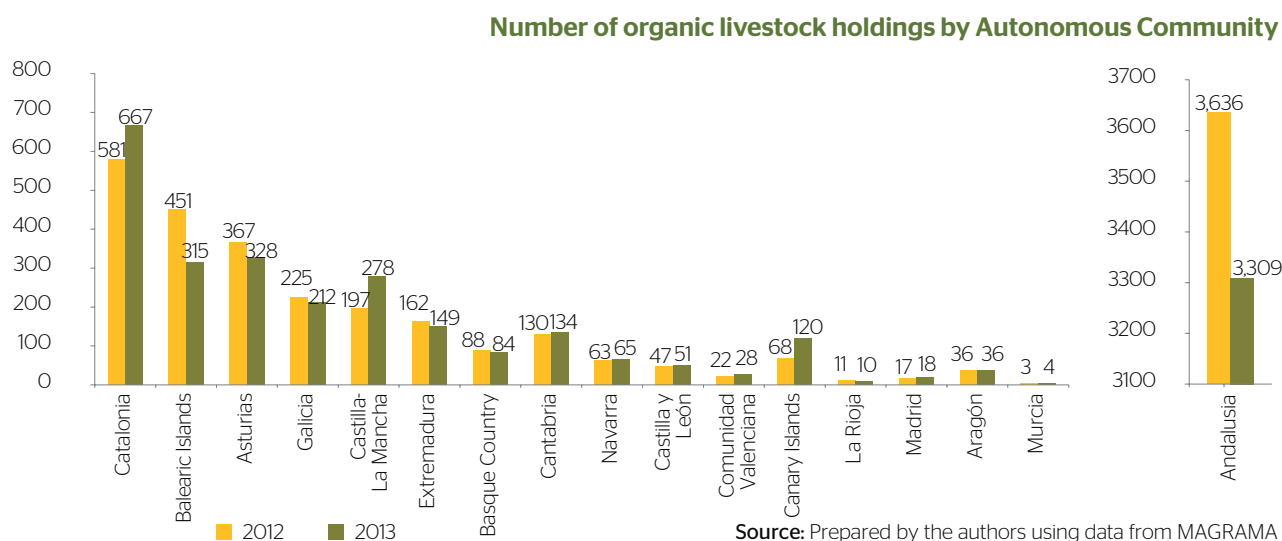
| Number of organic livestock holdings |       |       |                  |
|--------------------------------------|-------|-------|------------------|
| Farming lands                        | 2012  | 2013  | 2013/2012 Change |
| Bovine                               | 2,992 | 2,787 | -6.8             |
| Ovine                                | 1,739 | 1,621 | -6.8             |
| Caprine                              | 633   | 604   | -4.6             |
| Porcine                              | 148   | 137   | -7.4             |
| Poultry                              | 178   | 223   | 25.3             |
| Beekeeping                           | 188   | 195   | 3.7              |
| Equine                               | 226   | 238   | 5.3              |
| Total                                | 6,104 | 5,805 | -4.9             |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)



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With production primarily for meat production, of the 5,808 holdings registered in 2013, 2,787 holdings were bovine (48% of the total). Next was ovine production with 1,621 holdings (27.9% of the total) which, as in the case of cattle, were fundamentally involved in meat production, and the caprine holdings at 604 (10.4%) of the total.

In terms of interannual evolution in the number of holdings, bovine, ovine, caprine and porcine holdings experienced decreases of 6.8%, 4.6% and 7.4% respectively. On the contrary, between 2012 and 2013, poultry holdings (3.7%) equine holdings (5.3%) and, most of all, poultry holdings (25.3%) all saw growth.

In the breakdown by Autonomous Communities of livestock holdings, Andalusia was first with 3,309 holdings (57%), and an annual drop of 9%, followed by Catalonia with 667 holdings (11.5%) and an increase of 14.8%, Asturias with 328 holdings (5.6%) and a reduction of 10.6% and the Balearic Islands with 315 (5.4%) and a drop of 30.2%.

**Cattle farms, representing 48% of the total, fell by 6.8% in the last year**

#### Definition of the Indicator:

This indicator describes the evolution of the number of organic livestock holdings.

#### Methodological note:

The legislative framework governing organic farming and organic livestock farming in Spain since 1989 comprises the Regulation on Generic Organic Labelling and, at European level, Regulation EEC 2092/91 on Organic Agriculture and Indications referring thereto on Agricultural Products and Foodstuffs and Regulation EC 1804/1999 extending the aforementioned regulation so as to include Livestock Production.

#### Source:

[Ministry of Agriculture, Food and the Environment, 2014. Organic Farming Statistics 2013. Sub-directorate General for Differentiated Quality and Organic Farming](#)

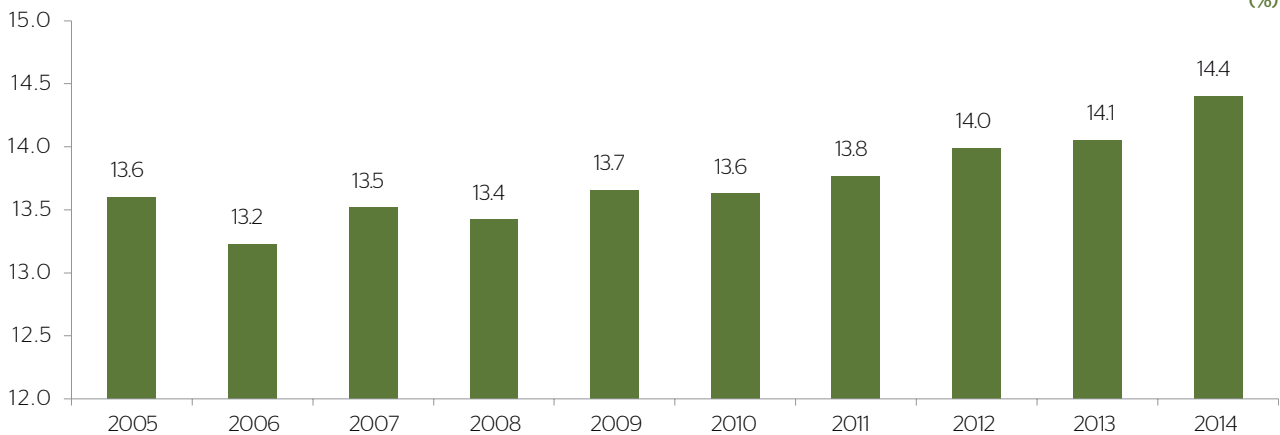
#### Recommended websites:

<http://www.magrama.gob.es/es/alimentacion/temas/la-agricultura-ecologica/>



## Irrigated Area

Irrigation area with respect to the total agricultural area (%)



Source: MAGRAMA

In 2014, the irrigated area, in respect of the total agricultural area, reached 14.4%

In relative terms, the Comunidad Valenciana with 40% is the Autonomous Community with the largest irrigated area as a proportion of total agricultural area

In absolute terms, Andalusia, with 28.7% of the total is the Autonomous Community with the most extensive irrigated agricultural area

Irrigation is a fundamental element in the Spanish agricultural sector. The improvement in the use of hydraulic resources in agriculture is the result of actions taken toward modernizing irrigation and the efficient use of water, not only through improvement in management using the infrastructure created but also moving towards the use more efficient irrigation systems.

According to data provided by the Survey on Areas and Crop Yields (ESYRCE) of 2014, the total area dedicated to irrigation in Spain reached 3,651,647 ha, increasing by 2.11% compared to 2013. This irrigated area corresponds to 14.4% of the total agricultural area.

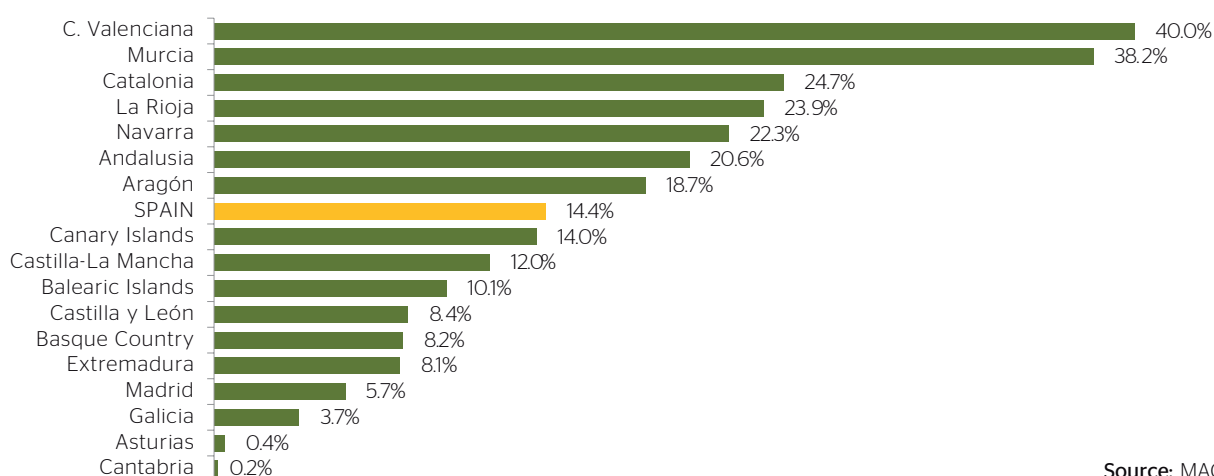
As a proportion of the total agricultural area, irrigated area has maintained growth levels in the past decade, going from 13.6% to 14.4%. In this period the figure has gone from 3,396,601 ha irrigated in 2005 to 3,651,647 ha in 2014.

In terms of the distribution in relation to irrigated area and total agricultural area by Autonomous Community, the regions with the highest percentage of irrigated area: the Valencian Community with 40%, Murcia with 38.2%, Catalonia with 24.7% and La Rioja with 23.9%. In these communities the number of hectares devoted to irrigation reached 280,701 ha, 184,575 ha, 251,734 ha and 53,932 ha respectively.

In absolute terms, those with the largest irrigated area were Andalusia with 1,048,942 ha (28.7% of the total), Castilla-La Mancha with 504,590 ha (13.8% of the total) and Castilla y León with 459,221 ha (12.6% of the total).

In this period, there was an increase in localised irrigation, more efficient and with better contained demand for water, to the detriment of lands irrigated by gravity, which involves much greater water consumption. According to the "Report on Irrigation in Spain 2014," of the ESYRCE, localised irrigation is the first-choice system for 48.71% of the irrigated surface, while gravity irrigation is applied across 27.36%. Together these systems represent more than 76% of the total irrigated area. These are followed by sprinkler irrigation systems (15.48%) and automated irrigation systems (8.44%).

### Irrigation area as a proportion of total agricultural area, 2014 (%)



Source: MAGRAMA

As regards irrigated areas, those groups of crops with the largest irrigated area in 2014 are cereals, with 1,002,740 ha (27.8% of the total), olive trees with 740,511 ha (20.5%), vines with 352,243 ha (9.8%) and citrus with 279,883 (7.8%).

#### Definition of the Indicator:

This indicator shows the evolution of irrigated agricultural area as a proportion of total agricultural area.

#### Methodological Notes:

- Irrigated area refers to the area devoted to crop production or pasture improvement that is supplied with water, irrespective of the number of times irrigation is performed per year.
- Total agricultural area refers to the area corresponding to arable and fallow land, greenhouses and family smallholdings.
- The irrigation area has been obtained from the ESYRCE Survey, after deducting irrigated forest area from the irrigation geographic area, and then adding greenhouse areas.
- As regards the values stated in relation to this kind of irrigation system, for the calculation of the irrigation area, the area comprised of meadows and pastures has been excluded, as well as the irrigation area for black poplars (methodology note on the s. "Survey on Crop Areas and Yield. Report on Irrigation Systems in Spain 2014).).

#### Sources:

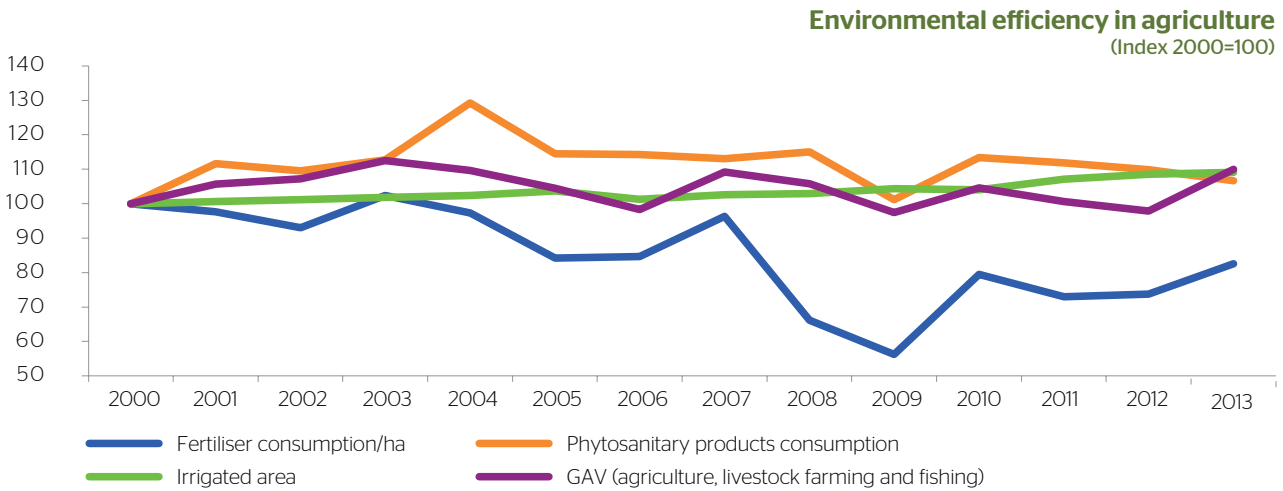
- [Ministry of Agriculture, Food and the Environment, 2015. Survey on Crop Areas and Yields \(ESYRCE\). Report on Irrigation Systems in Spain 2014\).](#)

#### Recommended Websites:

- <http://www.magrama.gob.es/es/estadistica/temas/estadisticas-agrarias/agricultura/esyrce/>
- <http://www.magrama.gob.es/es/estadistica/temas/publicaciones/anuario-de-estadistica/default.aspx>



## Environmental efficiency in agriculture



Source: Prepared by the authors using data from MAGRAMA, AEPLA and the INE

In the period 2000-2013, the economic rise of the agriculture sector was accompanied by a similar increase in the irrigated area and decrease in the use of phytosanitary products and fertilisers per hectare

To analyse environmental efficiency in agriculture, we compare economic growth in the sector with the most important associated pressures. In this case, for the 2000-2013 period, we take the irrigated agricultural area, consumption of fertilisers and consumption of phytosanitary products.

In general, except for irrigated area, which shows an upward trend sustained over time, the rest of the variables show irregular trends over the same period, with quite extreme annual fluctuations in the case of fertilisers.

Analysis of the Gross Value Added (GVA) of agriculture, livestock and fishing for the 2000-2013 period shows an increment of 10%, albeit with an annual increase of 12.5% (advance on 2013 data) registered in the last year available.

The ideal environmental efficiency situation is reflected by means of a clear decoupling between the sector's economic growth (with an upward trend) and the consumption of resources (which show a downward trend).

Phytosanitary products show a level of consumption per hectare which, although of a different magnitude, shows a trend similar to GVA, except for the last year. In this regard, and for the period 2000-2013, consumption of phytosanitary products increased by 6.7%, whereas during the last year analysed, unlike GVA, the consumption of phytosanitary products fell by 2.9%.

Meanwhile, use of fertiliser products per hectare was the variable that showed the most irregular trend over the course of the period. This was mainly due to climatic conditions for the crop year, as the trend in these climate variables, absence of rain, freezes etc. determine the use of fertiliser products and their market price. In the

period analysed, consumption of fertilisers saw a reduction of 17.4%. In 2013, however, consumption of fertilisers increased by 12%, due to climatic conditions that favoured production expectations, resulting a greater use of same.

Finally, the irrigated surface variable shows a practically continuous moderate increase. Its growth was the main link with GVA, showing an accumulated increase of 9.1% for the period 2000-2013, very close to the 10% shown by GVA.

In the period 2000-2013, the economic rise of the agriculture sector was accompanied by a similar increase in the irrigated area and decrease in the use of phytosanitary products and fertilisers per hectare.

#### Definition of the Indicator:

This indicator shows the relationship between Gross Value Added (GVA) for agriculture, livestock and fishing and the evolution of a series of variables selected as representative of the consumption of resources in the sector: consumption of phytosanitary products, consumption of fertiliser products and irrigated cultivation area.

#### Methodological Notes:

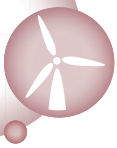
- The Gross Value Added in the sector refers to agriculture, fishing, hunting and forestry.
- For the purpose of calculating the indicator, environmental efficiency is considered positive when the trend in the sector's economic growth shows a trend towards decoupling (contrary and divergent) in respect of the pressures it exerts on the environment.

#### Sources:

- [Spanish National Institute of Statistics \(INE\). Spanish National Accounting. Gross Domestic Product at market prices and Gross Value Added at basic prices by branch of activity. Current prices. Accounting series 1995-2013.](#)
- [Fertiliser consumption: Annual Statistical Agri-food Report, 2014. MAGRAMA \(advance\).](#)
- [Consumption of phytosanitary products: Annual Statistical Agri-food Report, 2014. MAGRAMA \(advance\).](#)
- [Irrigated area and cultivated area: Survey on Crop Areas and Yields \(ESYRCE\), several years. MAGRAMA.](#)

#### Recommended Websites:

- <http://www.magramagobes.es/agricultura/temas/>
- <http://www.anffe.com>
- <http://www.aepla.es>
- <http://www.ine.es/jaxi/menu.do?type=pcaxis&path=%2Ft35%2Fp010&file=inebase&L=0>
- <http://www.magrama.gob.es/es/agricultura/temas/sanidad-vegetal/productos-fitosanitarios/fitos.asp>
- <http://www.magrama.gob.es/es/agricultura/temas/medios-de-produccion/productos-fertilizantes/>
- <http://www.magrama.gob.es/es/estadistica/temas/publicaciones/anuario-de-estadistica/default.aspx>



# ENERGY 2.12

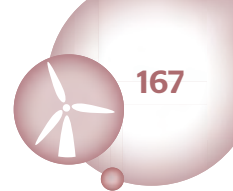
On 22 January 2014, the European Commission published the Communication "A strategic framework for climate and energy for the 2020-2030 period" for the purpose of continuing the current strategy under the "2013-2020 Climate Change and Energy Package" passed in 2008. This new framework paves the way toward a low-carbon economy, with a competitive and safe power supply system that reduces the EU's dependence on imports and the completion of the internal energy market, both for gas and for electricity, highlighting the importance of high competence levels in the internal energy market and thus progressing in all energy and climate objectives.

This communication proposes the establishment of several objectives at a European level: firstly, a 40% reduction of greenhouse gas emissions by 2030 in respect of 1990 levels; secondly, 27% of renewable energies in power consumption, to be achieved through a new governance framework building upon national plans presented by Member States, and thirdly, an increase in energy efficiency by 27%, to be reviewed in 2020, for the purpose of reaching 30% by 2030.

On the other hand, **Royal Decree-Act 8/2014**, of 4 July, on the approval of urgent measures for growth, competitiveness and efficiency, transposing a significant part of Directive 27/2012/EU on Energy Efficiency, was passed. With this law, an energy efficiency obligation system is created at a national level, by virtue of which companies selling gas and electricity to wholesale operators of petroleum products and liquefied petroleum gas are assigned an annual energy saving rate at a national level, the financial equivalent of which must be deposited in the **National Energy Efficiency Fund**.

In addition, as for the regulations on electric power, **Royal Decree 413/2014, of 6 June, governing electric power production activities using renewable power, co-generation and waste was published, and Act 24/2013, of 26 December, on the electric sector, amending the previous Act 54/97 with the same name, came into force**. With both legislation instruments, the purpose is to grant a new regulatory framework to this continuously progressing sector, in addition to alleviating the existing heterogeneous regulations within such an important economic sector.





In addition, in compliance with energy saving targets established by the EU Energy Efficiency Directive (which for Spain has been set at 571 ktoe/year), a new **National Energy Efficiency Action Plan (PNAEE)** has been presented for the 2014-2020 period laying down measures to improve energy efficiency. According to the plan, the regional distribution of the final saving targets would be: 25% transport, 15% building and equipment, 2% public services, 2% agriculture, 1% communication and 55% industry.

### Intensity of final energy, total and by sector

- During the 2004-2013 period, final energy intensity dropped to 19.17%
- Spain is the eighth country in the EU-28 with the lowest energy intensity
- High energy intensity: it is an indicator of a high cost "converting" energy into wealth (meaning it is an energy-consuming economy). Much energy is consumed while the GDP obtained is low

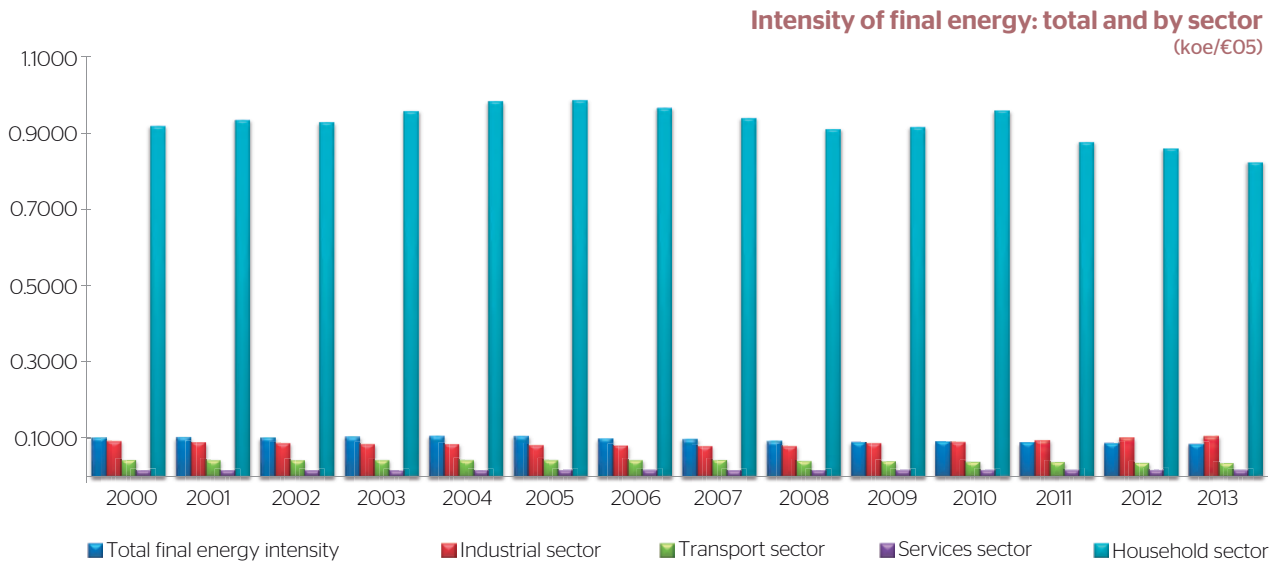
### Environmental efficiency in the energy sector

- Primary energy consumption in 2013 has dropped by 6% with respect to the previous year, reaching 121,120 ktoe
- The intensity of primary energy has dropped by 4.9% in 2013, having an impact on carbon and petroleum demand, which have dropped by 32% and 1.9% respectively
- Spain's energy dependence dropped in 2013 reaching 72.1%

### Renewable energy

- In 2013, a total of 85,437 ktoe of final energy and 121,120 ktoe of primary energy were consumed, of which 5,329 (6.2%) and 17,212 (14.21%) respectively come from renewable sources
- The National Energy Commission (CNE, by its Spanish acronym) manages a system that guarantees the origin of the electric power resulting from high-efficiency renewable energy and co-generation, so companies selling electric power to end clients and using high-efficiency renewable energy sources or co-generation can prove that the electric power sold is generated according to such principles

## Intensity of final energy: total and by sector



Source: IDAE. MINIATUR

During the 2004-2013 period, final energy intensity dropped to 19.17%

High energy intensity: it implies a high cost in "converting" energy into wealth (meaning it is a highly energy-consuming economy). Much energy is consumed while a low GDP is obtained

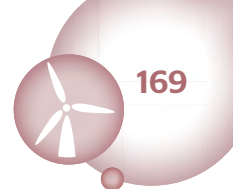
Spain is the eighth country in the EU-28 with the lowest energy intensity

Final energy consumption in Spain during 2013, including consumption for non-energy uses, amounted to 85,437 kilotonnes of oil equivalent (ktoe), 4% less than in 2012, when it came to 88,971 ktoe. Thus, the decreasing trend started in 2005 as a result of the economic climate and the structure of consumption sectors. Despite this downward trend, owing to a greater activity in some of the industrial sectors where energy use is extensive, an upturn was observed in 2010.

In line with the above drop in consumption, final energy intensity in Spain also dropped since 2005, again presenting an upturn in 2010. In 2013, the intensity indicator dropped by 1.43% up to 0.0852 Kgoe/€05, with respect to the numbers in 2012 which came to 0.0865 Kgoe/€05. As a result, considering the whole 2004-2013 period, final energy intensity dropped to 19.17%.

As for final energy intensity by sectors, that of transports and industry were the greatest contributions to its improvement between 2004 and 2008, while the contributions of the tertiary sector dropped. From 2009, and particularly during the last three years, the transport sector consolidated this downward trend, with 0.03357 Kgoe/€05 in 2013 (- 3.01% with respect to the previous year), while the industry registered an upturn in energy intensity of 4.96% between 2012 and 2013, reaching 0.1064 Kgoe/€05. After the upward trend shown in 2009 and 2010, a drop was observed in the services sector and the household sector which was consolidated in 2013, with a total drop of 3.84% and 4.18% correspondingly with respect to 2012.

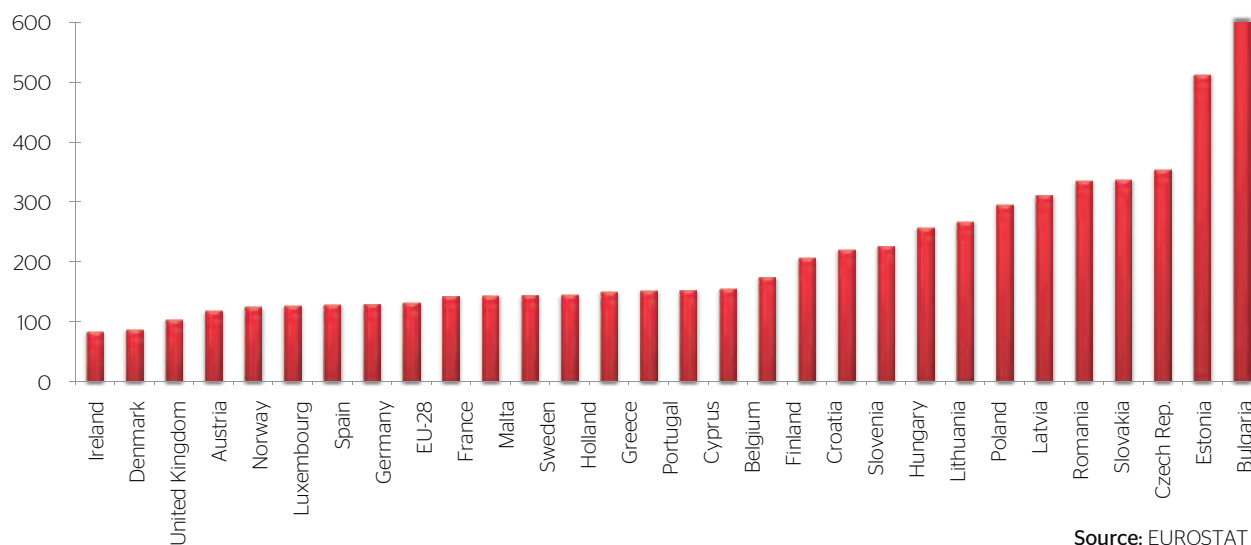
In the European Union (EU-28), Spain is the eighth country with the lowest energy intensity, with 128.7 kilograms of oil equivalent for every 1,000 Euros (Kgoe/€1,000), 9.12% less than the European average, which stands at 141.6 Kgoe/€1,000.



2.12

ENERGY

**Energy Intensity of EU in 2013**  
(kg of oil equivalent per €1,000)



Source: EUROSTAT

### Definition of the Indicator:

This indicator reflects the rate between final energy consumption and the volume of economic activity; it is calculated as the coefficient between final energy consumption and the gross domestic product (GDP) and is interpreted as "the unit of energy required to produce a unit of wealth". In principle, this justifies that the downward trend of this indicator suggests a lower (average) energy consumption to generate each unit of wealth, and thus it can be seen as an increase in global energy efficiency in the system under analysis.

### Methodological note:

- The information on energy intensity with regard to the European Union was calculated according to the Eurostat building on the domestic gross consumption and GDP rate. Domestic gross consumption of energy represents the gross consumption of five types of energy: carbon, petroleum, electricity, natural gas and renewable energies.
- €05: Euro value at constant prices in 2005.

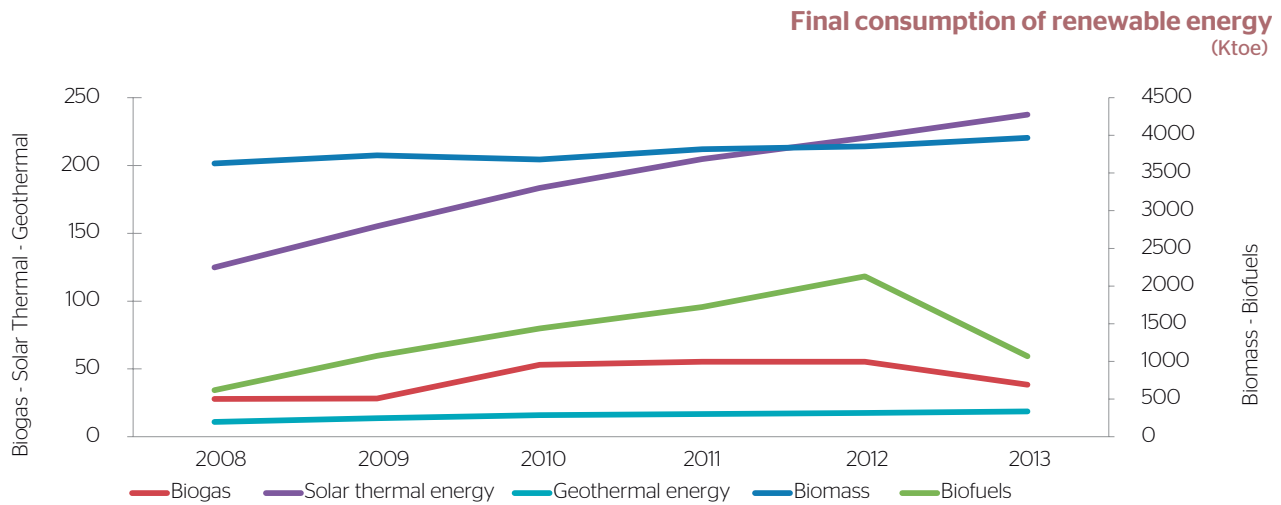
### Sources:

- IDAE. Information on the website: [Home / Studies, reports and statistics / Energy indicators / Energy intensity \(2013\) / Annual Report of Energy Intensity. Year 2013](#)
- EUROSTAT. Information on the website: [database / tables by themes / environment and energy / energy / energy statistics-main indicators / energy intensity of the economy](#)
- MINETUR. [Energy in Spain in 2013](#).

### Recommended Websites:

- <http://www.minetur.gob.es/energia/es-ES/Paginas/index.aspx>
- <http://www.idae.es/index.php/idpag.17/relmenu.329/mod.pags/mem.detalle>
- <https://ec.europa.eu/energy/en/topics/energy-efficiency>

## Renewable energy



Source: IDAE. MINETUR

In 2013, a total of 85,437 ktoe of final energy and 121,120 of primary energy were consumed, of which 5,329 ktoe (6.2%) and 17,212 ktoe (14.21%) respectively came from renewable sources

The National Energy Commission (CNE, by its Spanish acronym) is, since 2008, in charge of the management of a system that guarantees the origin of the electric power resulting from high-efficiency renewable energy and co-generation, so companies selling or distributing electric power to final clients and using high-efficiency renewable energy sources or co-generation can prove that the electric power sold is generated according to such principles

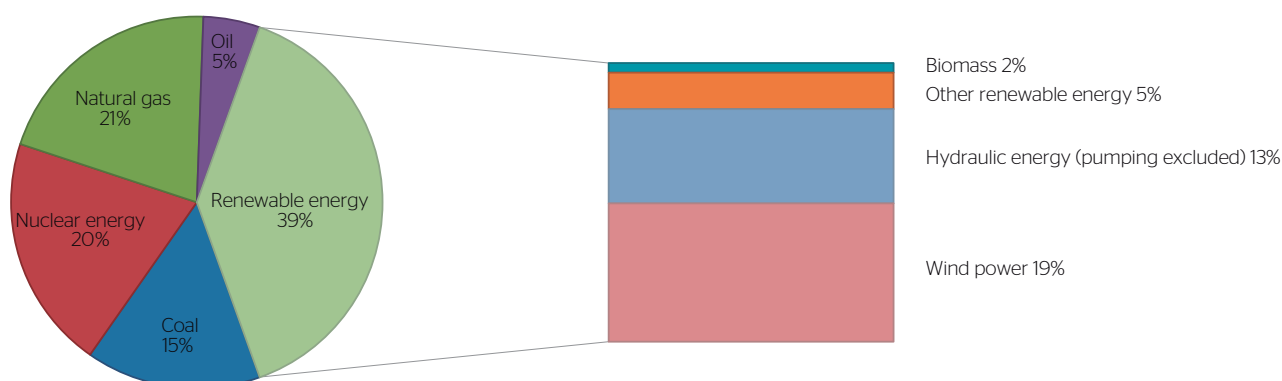
In terms of final energy, 85,437 ktoe were consumed in 2013, of which 6.2% (5,329 ktoe) correspond to renewable sources. Thus, the amount of renewable energies in terms of final energy has been reduced with respect to the previous year, during which renewable energies amounted to 7.1% of total consumption. From such 5,329 Ktoe, almost three correspond to biomass, more precisely 3,968 ktoe, 13% (527 ktoe) of which is associated to useful heat consumption obtained at co-generation stations with biomass and/or biogas, and the remaining thermal installations located in residential, industrial and service sectors. With a total contribution of 1,067 ktoe, biofuels are the second most important renewable resource, of which 80% correspond to biodiesel and 20% to biogasoline, while the third resource, solar-thermal power, amounts to less than 5% despite of the existence of over 3 million m<sup>2</sup> of installed surface. Finally, geothermal power, showing a significant upturn in the past years, still does not exceed 1% of the final consumption of renewable energy.

As for the consumption of primary energy in 2013, out of 121,120 Ktoe of total consumption, 17,212 ktoe come from renewable energy, showing a 7.5% increase with respect to the previous year. Renewable energies therefore amounted to 14.21% over the total volume of primary energy consumed in Spain. This upturn has been encouraged by solar technologies, particularly thermoelectric energy and, to a lesser extent, geothermal energy. In contrast, the energy group including biomass, biogas and biofuels has shown lower contributions with respect to previous years, mainly due to the drop in demand thereof. Wind power, hydraulic power and biomass amount for 75% of all of renewable energy contributions, while other technologies represent a lower contribution, particularly highlighting solar thermoelectric power, which has seen a 28.6% increase with respect to 2012 and amounts to 11.1% of primary consumption of renewable energy.

As for the use of the 17 million toe of renewable energy consumed in 2013 (two and a half times higher than consumption in 2000), approximately 70% was used for electric power, while heat generation amounted for approximately 24% and biofuel consumption to slightly over 6% of the total consumption of renewable energy.

As for electric power generation, according to the data of the IDAE (Institute for Diversification and Energy Saving), 38.32% of electric power in 2013 was obtained

## Structure of electrical generation in 2013



Source: IDAE. MINETUR

through renewable sources, which implies a 9% upturn in the contribution of renewable energies with respect to the previous year. Hydraulic and solar energy, with 12.97% and 19.01% respectively, were the main renewable contributions to electric power generation. The remaining electric power generated through renewable sources was completed by 7.4% of photovoltaic power, 4.4% of thermoelectric solar power and a remarkable 29% increase with respect to 2012, biomass amounting for 3.4% of the production of electric power from renewable sources and showing a 11% increase with respect to 2012 and, finally, biogas and renewable municipal solid waste, with less significant contributions of 0.8% and 0.5% correspondingly.

After renewable energies, both nuclear and natural gas power are almost at the same level (20%) and, along with petroleum (4.85%), complete the energy production scene in our country.

**Definition of the Indicator:**

This indicator provides data regarding the contribution of renewable energies in the primary and final energy structures, as well as a description of the structure of electric power generation in our country.

**Methodological note:**

The sources included as renewable are: biomass, biofuels, wastes, wind, solar, geothermal and hydroelectric.

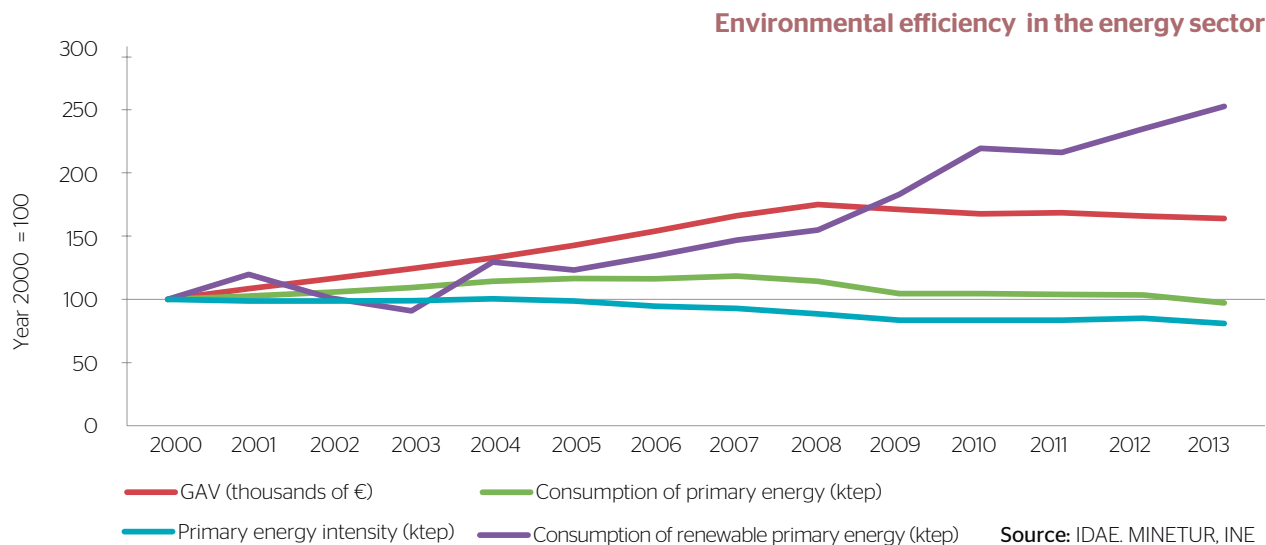
**Sources:**

- [Institute for Energy Diversification and Conservation \(IDAE\). Information on the website: Home/Studies, reports and statistics / Statistical reports / Statistical Report on Renewable Energy \(2013\).](#)
- [MINETUR. Information on the website: Energy / Energy Statistics and Balances / Publications on Energy Balances / Quarterly Report / Quarterly Report on the Energy Situation. Fourth Quarter 2013 / Table III.5](#)
- [MINETUR. Information on the website: Home/ Energy / Statistics and energy balances / Publications of Energy Balances / Libro de la Energía en España 2013](#)

**Recommended Websites:**

- <http://www.idae.es/index.php/idpag.802/relcategoria.1368/relmenu.363/mod.pags/mem.detalle>
- <http://www.minetur.gob.es/energia/balances/Paginas/Index.aspx>
- <http://ec.europa.eu/eurostat/web/energy/statistics-illustrated>

## Environmental efficiency in the energy sector



The consumption of primary energy in 2013 has dropped by 6% with respect to the previous year, reaching 121,120 ktoe

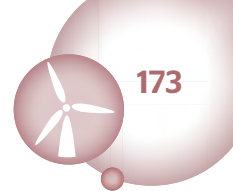
Energy dependence in Spain dropped in 2013 to 72.1%

Primary energy intensity has dropped by 4.9% in 2013, which has had an impact in carbon and oil demand, which dropped by 32% and 1.9% correspondingly

The drop in demand of conventional energy sources that took place in 2004, along with the economic crisis, has contributed to a downward trend in energy consumption in our country. This drop was consolidated in 2013 with the 6% drop with respect to the previous year, with primary energy demand amounting to 121,120 ktoe. The drop in demand of conventional energy sources was compensated by a 75% upturn of renewable energies which in 2013 accounted for 14.2% of the whole primary energy demand, particularly highlighting hydraulic, solar and wind powers, which registered an increase of 79%, 18.5% and 12.7% correspondingly to energy contributions.

As for final energy consumption, non-energy uses excluded, an evolution that was highly similar to that of primary energy was observed, with a 3.9% drop in demand with respect to the previous year until it reached 80,581 ktoe. However, the demand of renewable energies in final energy terms dropped by 15% mainly due to the evolution of biofuels (-49.9%) and the drop in thermal biogas (-30.8%) arising from a less intensive use of co-generation stations with biogas; biomass remains as the most frequently used renewable source for final use, with a contribution of 74.5%.

Such drop in primary energy consumption, along with the decrease registered in the Gross Value Added (GVA) which in 2013 registered a 1.2% drop with respect to the previous year, suggest an increase in primary energy intensity of 4.9% as a result of the differential evolution of both variables. This upturn is strictly related to the increase in hydraulic production, which caused the drop by 32% in carbon demand and a 1.9% drop in oil demand.



In terms of energy self-sufficiency, the evolution of renewable energy contributions since 2005 to the national energy system has brought a continuous improvement to this indicator, reaching 27.9% in 2013, approximately 9% over the data of 2006.

The numbers for the past ten years with regard to changes in energy consumption patterns and the use of fossil fuels in our country, which have shown significant drops, along with the improvement of variables such as energy intensity and self-sufficiency, suggest a very positive outcome that reaches its highest point in 2013 in the improvement of energy efficiency.

#### Definition of the Indicator:

This indicator describes environmental energy efficiency by comparing the consumption of primary energy (particularly that obtained from renewable sources) to the evolution of the Gross Value Added (GVA).

#### Methodological note:

- Conventional energy sources are carbon, nuclear energy, natural gas and oil.
- Energy self-sufficiency is the relation between the own production of an energy source or the ensemble of energy sources and the total consumption of such energy source.
- Energy Efficiency is the ensemble of actions that allow to optimise the relation between the amount of energy consumed and the end products and services obtained. Thus, it involves the reduction of energy consumption while maintaining the same energy services and without reducing comfort or quality of life, ensuring supply, protecting the environment and promoting sustainability. This indicator shows fluctuations, both positive and negative, of the different variables that have a direct impact in the analysis of energy efficiency.

#### Sources:

- [Institute for Energy Diversification and Conservation \(IDAE\). Information on the website: Home / Studies, reports and statistics / Energy indicators / Energy intensity \(2013\).](#)
- [MINETUR. Information on the website: Home/ Energy / Statistics and energy balances / Publications of Energy Balances / Libro de la Energía en España 2013.](#)
- [INE, 2015. Gross Domestic Product at market prices and Gross Value Added at basic prices by branch of activity. Spanish Regional Accounting. 2000-2013 Series. 2008 BASE \(CRE-2008\)](#)

#### Recommended Websites:

- <http://www.idae.es/index.php/idpag16/relmenu.301/mod.pags/mem.detalle>
- <http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/sistema-espanol-de-inventario-sei/>
- <http://www.minetur.gob.es/energia/es-ES/Paginas/index.aspx>



# 2.13

## INDUSTRY

For the first time since 2008, the Gross Domestic Product (GDP) in our country presented in 2014 a 1.4% increase in terms of volume in respect of 2013. In addition, the industrial sector in Spain represents a 15.9% of GDP and its GVA has grown by 0.28% against 2013, reaching €169,077 million, in line with the Industrial Production Index (IPI), which has seen a 1.1% increase in 2014 against the previous year.

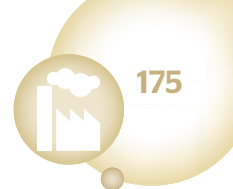
In line with this economic recovery trend, on 11 July 2014, the Council of Ministers passed the **Agenda for the Strengthening of the Industrial Sector in Spain**, prepared by the Ministry of Industry, Energy and Tourism (MINETUR). Such Agenda proposes an action plan that sets out 97 measures structured in ten action areas for the purpose of strengthening the sector and improving industrial competitiveness. Among action areas, special highlight must be given to those that deal with support to R&D&I, internationalisation of companies, endorsing a stable energy supply and improving access to the financing of SMEs. The Agenda has been drafted by 25 business organisations and associations, public and private bodies and institutions related to industrial activity, as well as the Spanish Confederation of Employers' Organizations (CEOE), the Spanish Confederation of Small and Medium-sized enterprises (CEPYME) and the trade union organizations UGT and CCOO.

This of stimulating industrial industrial development is also reflected in another measure implemented in 2014 by MINETUR, for the second year in a row, for the purpose of financing long term investment projects for the **promotion of industrial competitiveness** using loans, thus providing support to the execution of any kind of improvement or amendment of existing production lines **or contributing to industrial redevelopment** fostering the creation of new industrial facilities.

In addition, on 12 December 2014, **Royal Decree 1055/2014 was passed, creating a compensation mechanism for indirect greenhouse gas emissions** for companies at given industrial sectors and subsectors deemed as exposed to a significant "carbon leakage" risk, and the regulatory standards for the concession of subsidies for years 2014 and 2015 were approved.

From the environmental perspective, the Commission has proposed two new publications regarding Best Available Techniques for the industrial sector, known as BREF documents (Best Available Technique's Reference Document), arising from the information exchange required under the Directive 2010/75/EU on industrial emissions where Member States, affected industries and non-governmental





organisations promoting environmental protection take part. These BREF documents are summarised in "BAT conclusions" and reflected on Execution Decisions of a mandatory nature for Member States and which must be deemed as a reference for the establishment of conditions for installation permits within the corresponding sector; in 2014, **Decision 2014/687**, on the production of pulp, paper and board, and **Decision 2014/738** on industrial emissions, for the refining of mineral oil and gas, were published.

### Final energy consumption in the industrial sector

- The demand of final energy by the industrial sector has dropped for the third year in a row, reaching 20,750 ktoe
- Four industrial sectors have reduced their consumption of oil-based products in terms of final energy by more than 60%
- In 2013, Act 15/2012, of 27 December, on Tax Measures for Energy Sustainability, was passed, affecting electric and nuclear power generation in particular

### Environmental efficiency of industry: co-generation

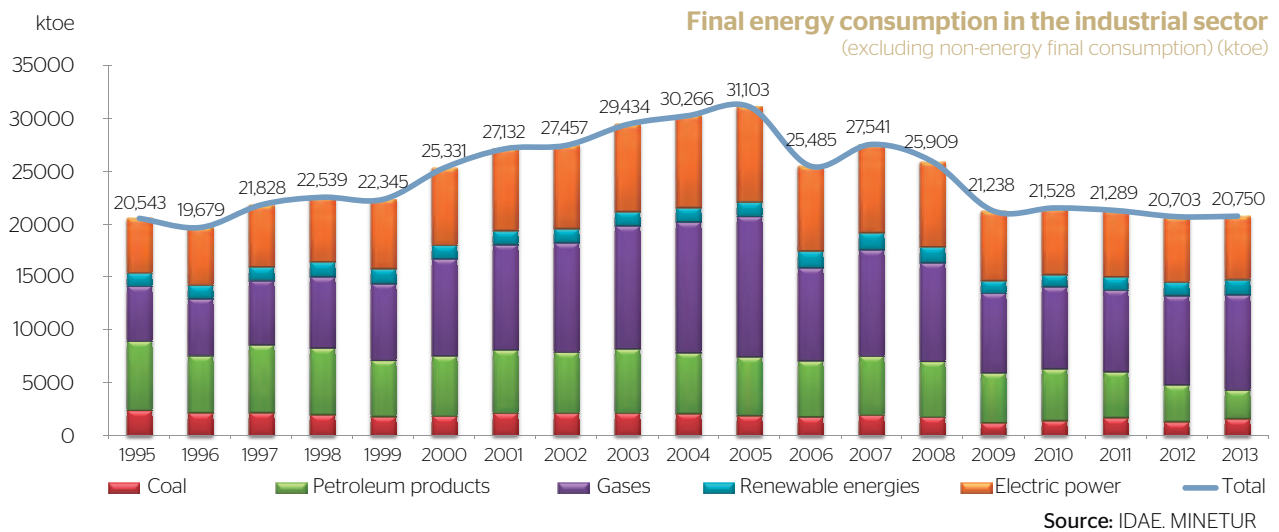
- During the 2000-2013 period, the number of co-generation facilities dropped by 3.96%, reaching 582, while the installed power during the same period increased by 27.65%, up to 5,812 MW
- Co-generation provides net benefits between €1,000 and €1,200 million per year to our country, amounting for saving in fuels, emissions and network leakages, as well as primary energy savings of 1,500,000 toe/year. This sector also reduces energy imports in Spain by 2% and green house emissions by 3.2%

### Investment in environmental protection within the industrial sector

- During the 2005-2012 period, the Spanish industrial sector invested a total amount of 8,223,796,466 Euros in environmental protection
- In 2012, 624,045,715 Euros were allocated to environmental protection, of which 38,5% were invested in air and climate protection, and 20.2% were allocated to waste water treatment
- The manufacturing industry and the coke-oven and petroleum refining industry are the industrial sectors which invested the highest amounts of money in environmental protection in 2012.



## Final energy consumption in the industrial sector



Final energy demand by the industrial sector has dropped for the third year in a row, reaching 20,750 ktoe

Four industrial sectors have reduced their consumption of petroleum-based products in terms of final energy, by more than 60%

According to energy balances at the Institute for Energy Diversification and Conservation (IDAE), final energy demand in 2013 (non-energy uses excluded) by the industrial sector, which amounted to 25.68% of final total demand, has dropped by 0.23% with respect to 2012, reaching 20,750 Kilotonnes of oil equivalent (ktoe). Said slight drop, which has taken place for the third year in a row, is mainly due to the industrial slowdown, as reflected in the Industrial Production General Index (IPI) provided by the National Institute of Statistics (INE), which in 2013 dropped by 1.8% on average against 2012 due to a lower production in almost every industrial sector, and particularly in the production of consumer durables, which dropped by 12.1%.

As for industrial sectors, in 2013 it was the sector of transport equipment which, in proportion, has most significantly reduced the consumption of final energy against the previous year (by 13.90%), reaching 384 ktoe. Right under transport equipment is the textile, leather and footwear sector, with a drop in final energy consumption of 11.95%, followed by the non-metallic minerals sector, which has dropped by 10.07%, reaching 3,383 ktoe.

As for the type of fuel in terms of final energy, in 2013 petroleum products were the type of fuel that observed the greatest drop against the previous year, with an average drop of 23.13%. In this regard, we must highlight that four industrial sectors have reduced their petroleum consumption in over 60%: the chemical sector (64.53%), iron and steel work foundries (66.25%), transport equipment (69.31%) and textile, leather and footwear (70.42%). On the opposite side of the spectrum, we can observe that extraction industry has increased its consumption of petroleum



products by 135.29%, from 68 to 160 ktoe, which has undoubtedly compensated a steeper drop in this regard.

The EU-28 in 2013 reverted the downward trend that it had shown since 2010 and final energy consumed by the industrial energy showed a 0.66% upturn against the previous year, reaching 276,988 ktoe. Such industrial consumption amounts for 25.07% of total final energy consumption, reaching the European average (25.68%).

In 2013, Act 15/2012, of 27 December, on Tax Measures for Energy Sustainability, affecting electric and nuclear power generation in particular, was passed

#### Definition of the Indicator:

This indicator represents final energy consumption data corresponding to industry, 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.

#### Methodological Notes:

- Industrial Production Index (IPI) measures monthly evolution of production activity in industrial sectors, i.e. extractive industries, manufacturing and production industries, electric, hydraulic and gas power production and distribution industries, water treatment and distribution. So as to calculate the IPI, the INE carries out an ongoing survey that each month investigates 11,500 establishments, where information is obtained from representative products of all the branches of activity.
- Transport equipment are self-propelled wheeled machinery loaded with materials to be transported and unloaded at the site of the works, installation or a landfill.
- Final energy data by IDAE do not include non-energy consumption; the industrial data obtained at EUROSTAT do not include consumption data of the energy sector and the processing sector.

#### Sources:

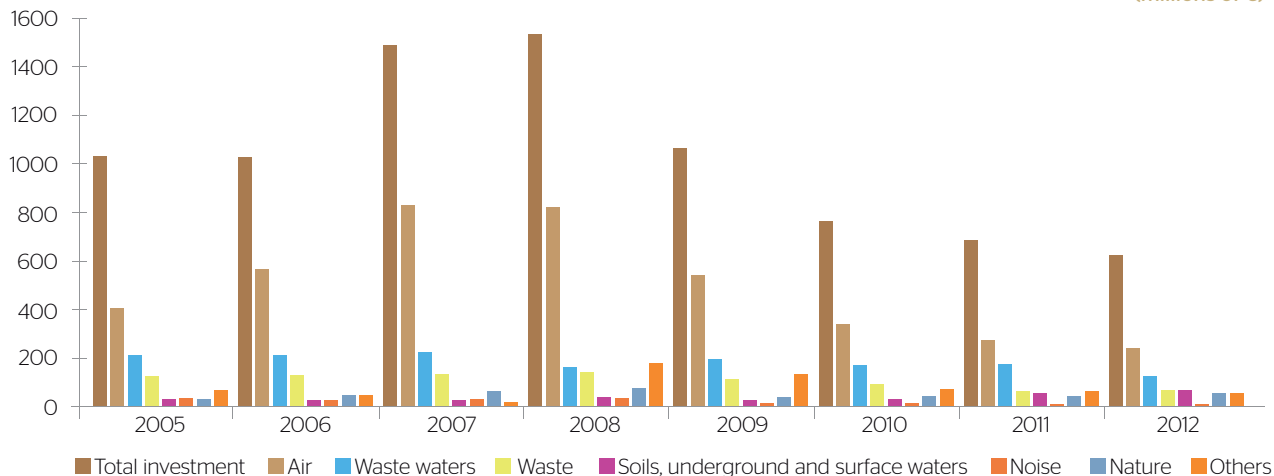
- IDAE. Information on the website: [Home / Studies, reports and statistics / Energy balances / Final Energy Balances \(1990 - 2013\)](#)
- EUROSTAT. Information on the website: [database / tables by themes / environment and energy / energy / energy statistics-quantities / final energy consumption by sector](#)
- INE. Information on the website: [INEbase / Industry, energy and construction / Industry / Industrial Production Index](#)

#### Recommended Websites:

- <http://www.minetur.gob.es/energia/es-ES/Paginas/index.aspx>
- <http://www.idae.es/index.php/idpag16/relmenu.301/mod.pags/mem.detalles>
- <http://ec.europa.eu/eurostat/web/energy/statistics/illustrated>

## Investment in environmental protection within the industrial sector

Investment in environmental protection within the industrial sector  
(millions of €)



Source: INE

During the 2005-2012 period, the Spanish industry invested a total amount of 8,223,796,466 Euros in environmental protection

In 2012, 624,045,715 Euros were allocated to environmental protection, of which 38.5% were invested in air and climate protection and 20.2% in waste water treatment

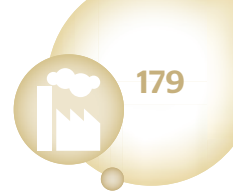
Between 2005 and 2012, the **total investment** by the Spanish industry in environmental protection amounted to €8,223,796,466, being 2008 the year during which the greatest investment was made, amounting to €1,533,797,410. During said period, when irregular trends were the result of the economic recession, an upturn was observed during the first half (2005-2008), when environmental investment increased by 103.6% up to €823,973,603, along with a drop in investments by 59.31% during the four last years of the series, reaching 624,045,715 Euros in 2012, 8.77% less than in 2011, when the investment amounted to €684,099,385.

In terms of distribution by equipment and environmental areas of the total investment made by the industrial sector in 2012, 42.53% was allocated to measures in independent equipment and installations, and 57.47% to integrated equipment and installations. More precisely, 38.5% (€240,685,579) was allocated to the area of air and climate protection, 20.21% (€126,180,609) to waste water management, 11.06% (€69,078,752) to the protection and decontamination of soils, underground and surface water, 10.69% (€66,724,279) to waste management, 9.28% (€57,952,135) to biodiversity and landscape protection, 8.55% (€53,381,336) to other environmental protection activities and 0.15% (€9,593,025) to noise and vibration reduction.

Such distribution is quite similar to that of the previous year, when 42% was allocated to individual equipment and installations and 58% to integrated equipment and installations, when air protection and waste water management protection areas were those to which most investments were allocated, with 40.1% and 25.3% correspondingly.

As for industrial sectors, those which made the most significant investments in environmental protection in 2012 were:

- The manufacturing industry with 77.02% of the total investment made, amounting to €480,665,423, of which 46.22% were allocated to air and climate protection.



2.13

INDUSTRY

The manufacturing industry and the coke-oven and petroleum refining industry are the industrial sectors which invested the most money in environmental protection in 2012

- Coke-oven and petroleum refining industries with 23.68%, amounting to €147,792,835, of which 23.66% was allocated to the protection and decontamination of soils, underground and surface waters. The manufacturing sector was that which made the greatest investments on this area.
- The electric power, gas, steam and air conditioning supply sector made an investment of €126,032,220, 20.19% of the total amount, of which 36.25% was allocated to the protection of biodiversity and landscape, being the sector which has made the greatest investment in this regard.
- The chemical and pharmaceutical industry, with an investment of €90,393,059, amounting to 14.85% of the total, of which 66.96% was allocated to air protection and waste water management.

On the other hand, current expenditure in 2012 dropped by 27.81% in respect of the previous year, reaching €1,724,741,197.

#### Definition of the Indicator:

This indicator describes the investment in environmental protection made by the industrial sector to reduce or eliminate the emissions of polluting agents into the air and acoustic pollution, for the protection of nature and soils, for the treatment of waste waters and urban solid waste and so as to use not as many polluting raw materials or less polluting ones.

#### Methodological Notes:

- The data stated herein are part of the Survey on industrial expenditure on environmental protection carried out by the National Institute of Statistics, and comprise companies of over 10 employees whose main activity is included in sections B, C or D of the National Classification of Economic Activities (CNAE-2009).
- The appropriate expenses are classified as follows:
  - Total investment: the ensemble of investments made on integrated equipment and installations and independent equipment and installations.
  - Investments in integrated equipment and installations preventing contamination. It is a dual-use technology: both for industrial purposes and for pollution control, taking only the environmental component of the investment in this equipment.
  - Investment in equipment and separate installations the main purpose of which is to treat pollution. These are operating independently from the production process.
  - Current expenses, made up by those operating expenses allocated to the profit and loss account of the General Accounting Plan, which is primarily aimed at the protection of the environment.

#### Source:

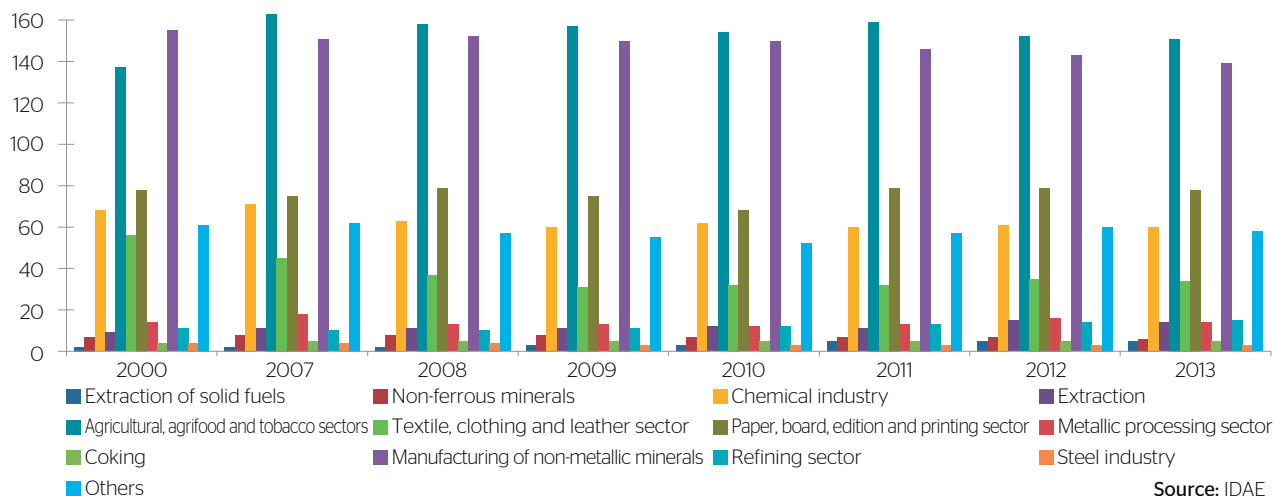
INE. Information on the website: [INEbase / Agriculture and the Environment / Environmental protection and Waste / Statistics on environmental protection activities \(Formerly at INEbase / Physical environment and the environment / Environmental Statistics / Survey on environmental protection by the industry\)](#)

#### Recommended websites:

[http://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica\\_P&cid=1254735570567](http://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica_P&cid=1254735570567)

## Environmental efficiency of industry: co-generation

Number of co-generation facilities



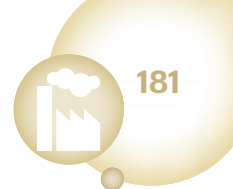
During the 2000-2013 period, the number of co-generation facilities dropped by 3.96%, reaching 582, while the installed power during that same period increased by 27.65% up to 5812 MW

During the 2000-2007 period, the number of co-generation facilities in Spain increased by 3.13%, from 606 facilities existing in 2000 to 625 in 2007. The metallic processing sector, along with the machinery and equipment manufacturing sector, are the industrial sectors which have shown a greatest growth in operating co-generation facilities, with an upturn of 28.57%, from 14 to 18 facilities, and 22.22%, from 9 to 11 facilities, correspondingly.

This upward trend was interrupted during the 2008-2013 period, during which the number of co-generation facilities was reduced by 43 against 2007, involving a 6.88% drop. Comparing 2008 and 2013 data, the sectors showing greatest drops are the non-metallic manufacturing sector, formerly with 152 facilities, now 139, and the agricultural, agrifood and tobacco sector, which in 2008 had 158 facilities and 151 in 2013.

In 2013, the total amount of co-generation installations is 582, 3.96% less than the previous year (595), and the most represented is the agricultural, agrifood and tobacco sector with an amount of facilities that accounts for 25.94% of the total, followed by the manufacturing of non-metallic minerals which account for 23.88% of the total amount of co-generation facilities. These are the most represented sectors in recent years and, thus, those which have suffered the greatest drops as for the number of facilities.

However, in terms of installed power, the increase has been continuous since 2000 until 2013, accounting for all industrial co-generation installations in this past year for a total of 5,815 MW, 27.65% more than in 2000. The sectors with a highest installed power are, in decreasing order: the agricultural, agrifood and tobacco sector with 1,257 MW, the paper, board, edition and printing sector with 1,254 MW, the chemical



industry with 1,033 MW and the refining sector with 641 MW.

In spite of the continuous growth, installed power in 2013 dropped by 107 MW against the previous year, a 1.80% drop. The metallic processing sector, with a 17% drop, was that which suffered a greatest drop and thus the sector that has most contributed to the reduction of installed power of the industry in the last year.

At a European level, Spain stands as twenty-first in terms of gross electric power generated by co-generation, with 8.9% in 2013, under countries such as Luxembourg (64.1%), Denmark (48.8%), Lithuania (36.1%), Latvia (34.5%), Finland (34.5%), The Netherlands (33.7%) or Slovakia (26.6%). Nonetheless, Spain stands as the third country which has most improved the electric power generated through co-generation percentage between 1994 and 2013, with an increase from 5.3% in 1994 to 8.9 in 2013 as said above.

Co-generation has net benefits between €1,000 and €1,200 million per year, accounting for energy saving in fuels, emissions and network leakages, as well as a primary energy saving of 1,500,000 toe/year. It also allows to reduce energy imports by 2% in Spain and 3.2% of greenhouse gas emissions

#### Definition of the Indicator:

This indicator shows the evolution of co-generation in our country, as a significant indicator of environmental efficiency and energy saving, since 2000 until 2013, providing data regarding the amount of co-generation facilities by industrial sector, installed power and fuel.

#### Methodological Notes:

- Co-generation is a technology used to improve energy efficiency through the generation of heat and electricity at the same facility, mostly using a gas turbine with heat recovery, which can be used to heat up the processes or spaces of any economic activity, including the residential sector. This way, the need for combustion is reduced and environmental impact such as CO<sub>2</sub> emissions is prevented.
- The numbers at a European Union level represent the percentage of electric power obtained from heat and energy generation in total gross electric power.

#### Sources:

- IDAE. Information on the website: [Home/Studies, reports and statistics / Statistical reports / Statistical Report on Co-generation \(2013\)](#).
- MINETUR. Information on the website: [Home/ Energy / Statistics and energy balances / Publications of Energy Balances / Libro de la Energía en España 2013](#).

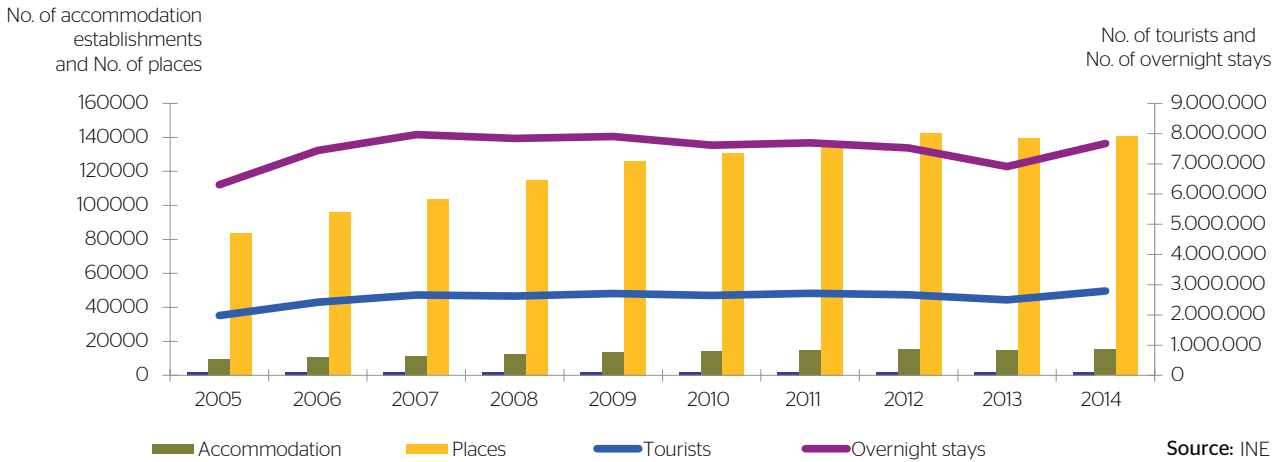
#### Recommended Websites:

- [www.acogen.org/](http://www.acogen.org/)
- [www.cogenspain.org/](http://www.cogenspain.org/)
- <http://www.cogeneurope.eu/>
- [www.plantasdecogeneracion.com/](http://www.plantasdecogeneracion.com/)
- <http://www.minetur.gob.es/energia/desarrollo/EficienciaEnergetica/Paginas/cogeneracion.aspx>
- <http://www.minetur.gob.es/energia/electricidad/energias-renovables/Paginas/renovables.aspx>



## Rural tourism: accommodation, capacity, tourists and overnight stays

### Rural Tourism, 2005-2014



Compared to 2013, in the year 2014 the number of rural stays increased by 0.9% and the number of beds on offer by 1.2%. In terms of use of this offer, the number of overnight stays has increased by 11% and the number of travellers by 11.8%

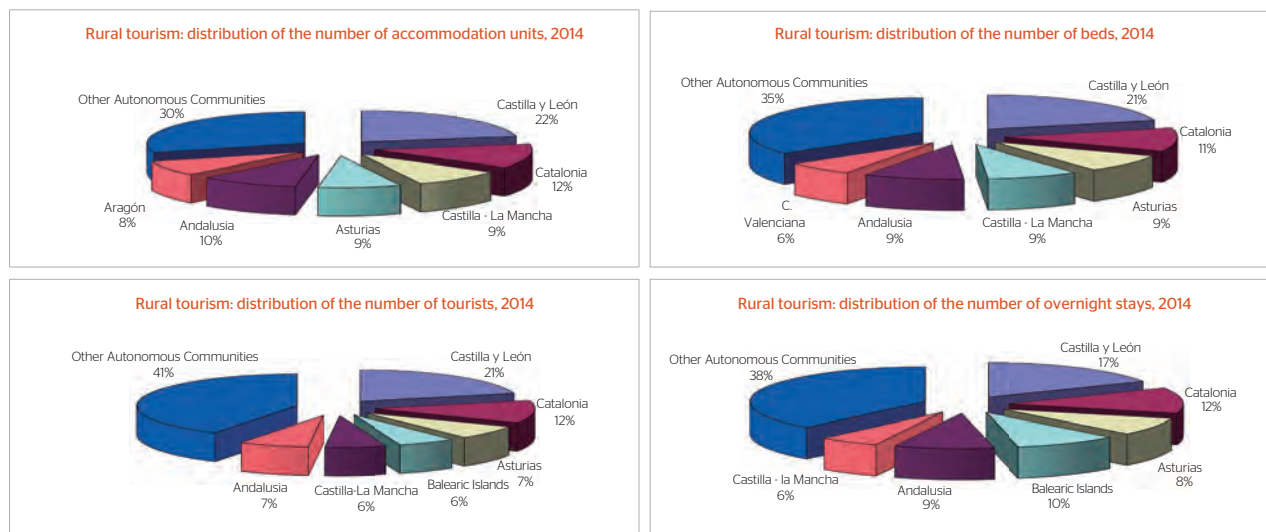
The evolution of the main indicators of rural tourism over the last 10 years (period 2005-2014) presents positive growth. Compared to 2013, in the year 2014 the number of rural stays increased by 57.7% and the number of beds on offer by 67.9%. In terms of use, the number of overnight stays increased by 21.7% and the number of visitors by 41%.

Contrary to what occurred in 2013, the year in which the principal indicators of rural tourism experienced a negative growth, in 2014 the indicators of rural tourism, number of accommodation units, places, number of tourists and overnight stays showed a positive growth, although to a different extent. According to provisional figures collected in the INE's Occupancy Survey in Non-Hotel Accommodation, the number of rural accommodation places has increased by 0.9% in the last year, going from 15,044 to 15,183 accommodation units and the number of places offered also increased by 1.2% from 139,266 to 140,952 in 2014. Similarly, but in greater magnitude, the number of overnight stays grew by 11% in 2014, going from 6.9 million in 2013 to 7.1 million. In the same year, the number of visitors increased by 11.8%, rising from 2.5 to 2.8 million in 2014.

The Autonomous Communities with the highest number of rural tourism establishments in 2014 were Castilla y León with 3,363 establishments (-2% year-on-year), followed by Catalonia with 1,877 establishments (+14.0%), Andalusia with 1,541 (+6%), Castilla-La Mancha with 1,419 (+0.8%), Asturias with 1,290 (1.1%) and Aragón with 1,167 establishments (+1.95% year-on-year). These regions together represent 70.2% of rural tourism establishments.

The analysis of the number of places offered in 2014 in these Autonomous Communities with the greatest number in offer are Castilla y León with 29,264 places (-2.6% year-on-year), followed by Catalonia with 15,433 places (+16.3%), Andalusia with 13,137 (+5.2%) Castilla-La Mancha with 12,166 (+1.9%), Asturias with 12,046 (3.0%) and Comunidad Valenciana with 9,081 places (-1.4% year-on-year). These regions together represent 64.7% of rural tourism establishments. At the other end we find the communities with lower number of beds which are, once again, La Rioja (967 beds) and Murcia (1,757 beds).





As for the number of rural tourists received in 2014, Castilla y León is, once more, the Autonomous Community receiving the highest number of tourists with 591,282 visitors (+7.7% year-on-year), followed by Catalonia with 328,505 (+23.8%) and Andalusia with 199,025 (+7.5% year-on-year). Once again, La Rioja with 23,465 visitors (-10.2%) and Murcia with 29,189 visitors (+12.2% year-on-year) are the Autonomous Communities with the lowest number of visitors received.

Finally, on the number of overnight stays, Castilla y León along with Catalonia and Andalusia are the Autonomous Communities that registered the highest levels for 2014, with 1,343,790 overnight stays (+8.7% year-on-year), 917,853 (+25.0%) and 737,325 overnight stays (+8.8% year-on-year) respectively. Once again, La Rioja with 55,410 overnight stays is the region with the lowest number of registered overnight stays.

In 2014 the average stay at these establishments was 2.7 days and the number of jobs generated by the sector reached 21,815 new jobs, 1.6% more than in the previous year.

### Definition of the Indicator:

This indicator presents the evolution of a series of principal rural tourism variables: establishments, bed places, overnight stays and number of visitors.

### Methodological Notes:

- Rural tourism accommodation is integrated by those establishments or household units intended to provide tourist accommodation at a certain price, with or without other additional services, which are registered with the Tourist Accommodation Register of each autonomous community. Usually, these establishments share certain common features such as, for example, being located in buildings with an architectural design typical of the area or in country houses that carry out agriculture and livestock activities (agritourism).
- Act 45/2007, of 13 December, for sustainable development of the rural environment, encourages the promotion of rural tourism through a proper regulation of tourist attractions and by means of the improvement of tourist demand, paying special attention to sustainable tourism in priority rural areas and to agritourism or tourism related to agricultural activities.

### Source:

INE, 2015. Surveys on occupancy at non-hotel tourist accommodation. En INEbase / Services / Hospitality and Tourism / Rural Tourism Accommodation Occupancy Survey

### Recommended websites:

[http://www.ine.es/inebmenu/mnu\\_hosteleria.htm](http://www.ine.es/inebmenu/mnu_hosteleria.htm)



# FISHING 2.14

According to the FAO, fishing production worldwide has grown constantly in the last five decades and the supply of fish has reached an average annual rate of 3.2%, thus exceeding world population growth which stands at 1.6%. In this scenario, aquaculture is maintained as one of the fastest growing strategic sectors in food production.

The fishing and aquaculture sector is very dynamic and faces many great challenges. These range from illegal, non-declared and non-regulated fishing to fishing practices that are scarcely sustainable. In this sense, it must be highlighted that when catches exceed the capacity for reproduction of the species, it causes the depletion of populations, which can generate imbalance in the marine ecosystem.

The new Common Fisheries Policy (CFP) which entered into force on 1 January 2014 attempted to correct these imbalances to guarantee that fishing and aquaculture remain sustainable from an environmental, economic and social perspective, offering EU citizens a source of food.

The management of the capacity of the fishing fleet is an essential instrument for the sustainable exploitation of resources and, moreover, constitutes one of the main objectives of the CFP. Over the last nineteen years, the fishing fleet capacity of the EU has fallen both in terms of tonnage and engine power. In spite of the expansion of the Union, in February 2014 the number of vessels was 87,445 (19,284 fewer vessels than those of 1995).

The EU is the fifth largest producer of fish and represents close to 3.5% of overall production. Spain, along with Denmark, the United Kingdom and France represent more than 50% of EU catches. The fisheries sector performs a fundamental role in many regions of the European Union in terms of employment and economic activity and in some coastal communities it represents more than half of the local employment. Spain alone represents a quarter of employment in fishing in the EU and the countries with highest levels of employment in fisheries (Spain, Italy, Greece and Portugal) account for around 70% of the total.

In 2013 aquaculture established a maximum production and reached a production of almost half of the fish destined for human consumption. It is forecast that this proportion will continue to rise until it reaches 62% in the year 2030. Aquaculture production in the EU is in the order of 1.25 million tonnes and represents more than 20% of the total volume of fisheries production in the EU.

The policy structure of the fisheries sector contributes to meeting the objectives of the CFP and strengthening economic and social cohesion. The European Maritime and Fisheries Fund (EMFF), in operation since 1 January 2014, is the financial instrument of this policy that supports the strengthening of fish stocks, the progressive elimination of discards and the reduction of the impact of fishing on the marine environment.

2.14

FISHING

### Number of vessels and fishing fleet capacity

- In accordance with the national adaptation plans for the fishing fleet, the downward trend is maintained for the number of vessels and capacity of the Spanish fishing fleet.
- In 2013, the Spanish fishing fleet was made up by 9,871 vessels, representing a total tonnage of 372,617 GT and 846,719 kW.
- In the period 1998-2013, the Spanish fishing fleet decreased by 41.6% in terms of number of ships, 31.7% in terms of tonnage (GT) and 33.9% in terms of power (kW).

### Fishing fleet catches

- According to Eurostat, the total catch for the Spanish fishing fleet (referring to live weight) in 2013 increased by 16.4%.
- The total catch for the Spanish fishing fleet in 2013 was 882,309 tonnes.
- Over the last 10 years (2004-2013) the EU-27 has reduced total catches (live weight) by 36.7%, while in Spain they have increased by 22.8%.

### Aquaculture production

- Aquaculture production fell by 13.6% in 2013 to 250,751t.
- The production of mussels, which represents 76.8% of total aquaculture production, experience a notable decrease of 18.5% in 2013, falling to 188,995 t.
- In 2013 there were a total of 5,025 aquaculture establishments functioning in Spain. Of them, 178 were in continental waters and 4,847 were in marine waters

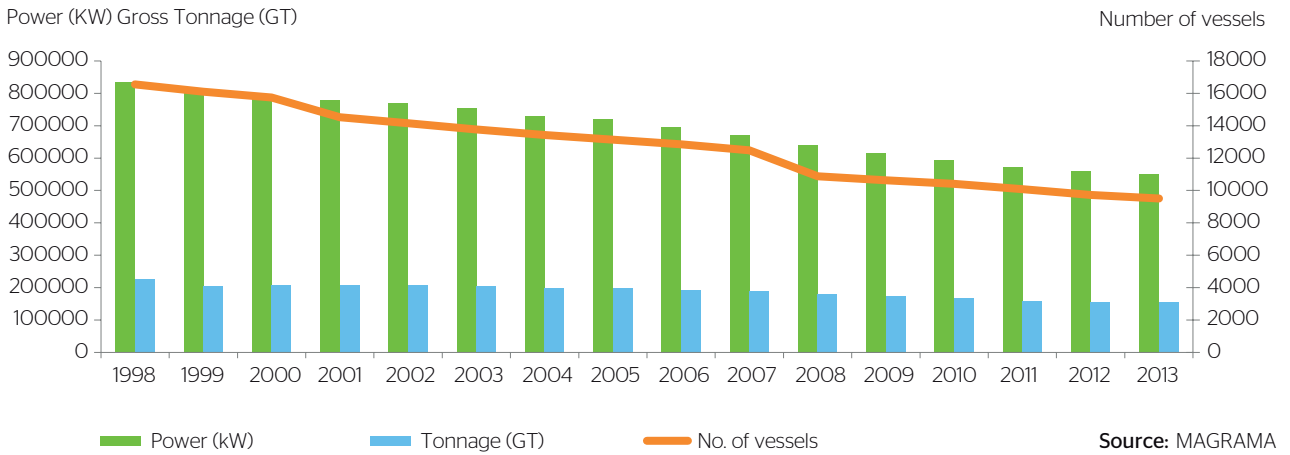
### Environmental efficiency in the fishing and aquaculture sector

In the period 2000-2013, the variables studied associated with the fisheries sector can be summarised as follows:

- An increase of the GVA associated to the activity of 10%.
- The volume of catches decreased by 17.3% and aquaculture by 11.7%.
  - All this with fewer resources, with the number of vessels falling by 39.6%, power by 31.0% and tonnage by 25.9%.

## Number of vessels and fishing fleet capacity

### NUMBER OF VESSELS AND FISHING FLEET CAPACITY (national fishing grounds)



In accordance with the national adaptation plans for the fishing fleet, the downward trend is maintained for the number of vessels and capacity of the Spanish fishing fleet

In 2013, the Spanish fishing fleet was made up by 9,871 vessels, representing a total tonnage of 372,617 GT and 846,719 kW

In the period 1998-2013, the Spanish fishing fleet decreased by 41.6% in terms of number of ships, 31.7% in terms of tonnage (GT) and 33.9% in terms of power (kW)

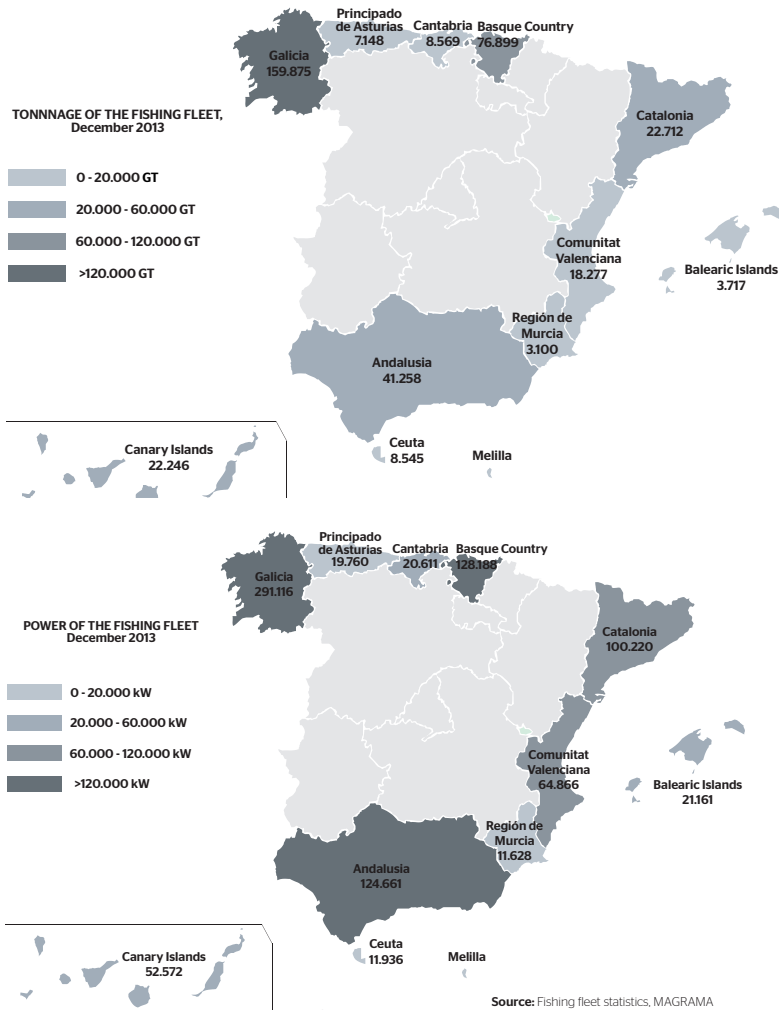
As a consequence of adapting to European guidelines, Spanish fishing has suffered a long-term structural adjustment focussed on reducing the fishing effort, aimed at ensuring a fleet appropriate for the resources situation and promoting the recovery and better exploitation of those same resources. In this respect, Spain has recorded a continued and maintained reduction since 1998, in terms of the number of vessels, the power and tonnage of the fleet.

Regulation (EC) 1198/2006 of the Council, of 27 July 2006, relating to the European Fisheries Fund, establishes in Chapter I the measures for adaptation of the community fishing fleet along with the possibility of providing help to owners and fishermen of fishing vessels affected by the national adjustment plan of the fishing fleet.

As a consequence of the application of national programmes for the adaptation of the fishing effort to match the state of resources and the situation of fisheries, the construction, modernization and conversion of vessels showed a reduction of 2.2% of the fishing fleet in the past year. In 2013, the Spanish fishing fleet was made up by 9,871 vessels, in comparison to 10,116 vessels in 2012, representing a total tonnage of 372,617 GT and 846,719 kW. In 2013, only 361 vessels fished outside of the national fishing grounds.

During the period 1998-2013, the Spanish fishing fleet decreased by 41.6% in number of ships, 31.7% in terms of tonnage (GT) and 33.9% in power (kW).

In terms of the distribution of the fleet by Autonomous Communities, those with the greatest number of vessels are: Galicia (4,739 vessels), Andalusia (1,575 vessels), Catalonia (869 vessels) and the Canary Islands (836 vessels), and those with the greatest concentration of tonnage are Galicia (159,875 GT), the Basque Country (76,899 GT) and Andalusia (41,528 GT).



### Definition of the Indicator:

The indicator describes the evolution of the Spanish fishing fleet through the number of vessels comprising the fleet and its characteristics, tonnage (GT) and power (kW).

### Methodological Notes:

- This indicator refers to the ships of the 3<sup>rd</sup> list of the General Fishing Vessel Register, integrating the Census of the Operational Fishing Fleet that was operating as of 31 December of each year. Throughout this period, some vessels may change fishing grounds and, therefore, the sum of those may provide different results depending on the date considered. An important number of vessels are traditional boats, and some of them do not even have a fixed engine.
- In order to calculate this indicator, pursuant to Regulation (EC) No. 2.371/2002 of the Council, the fishing capacity is expressed through power, measured in kilowatts (kW) and load capacity (tonnage), expressed in GT (Gross Ton). This unit has been replacing Gross Registered Tonnes (GRT) since 1998.

### Source:

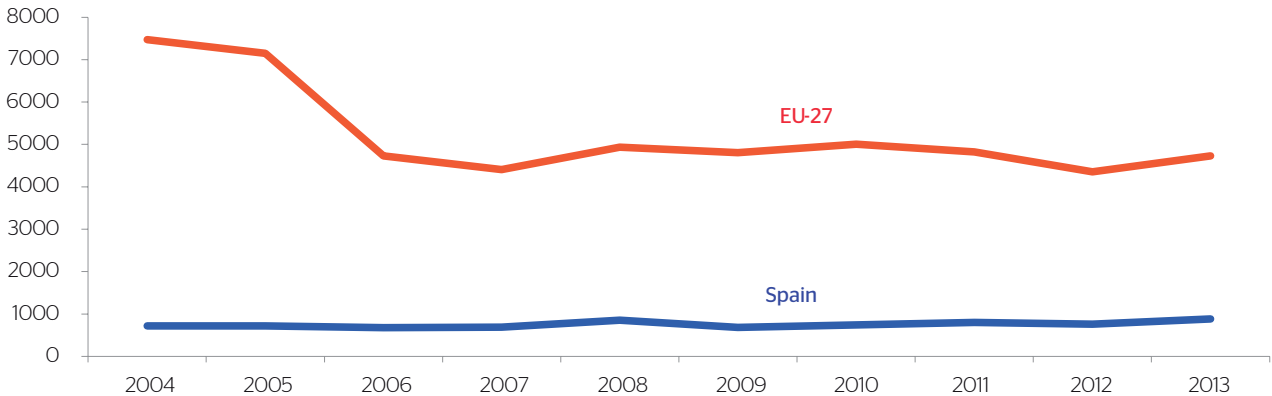
Ministry of Agriculture, Food and the Environment, 2015. Data provided by the General Secretariat of the Sea.

### Recommended websites:

<http://www.magrama.gob.es/es/pesca/temas/>

## Fishing fleet catches

**Total catches of the european union and spain**  
(Thousands of tonnes of live fish)



Source: Eurostat

According to Eurostat, the total catch for the Spanish fishing fleet (referring to live weight) in 2013 increased by 16.4%

The total catches for the Spanish fishing fleet in 2013 were 882,309 tonnes

Over the last 10 years (2004-2013) the EU-27 has reduced total catches (live weight) by 36.7%, while in Spain they have increased by 22.8%

The importance of this sector has been analysed through the fishing statistics provided by Eurostat, which annually reports all the catches made in all fishing grounds and fishing areas, where the fishing vessels of the countries of the European Union develop their activities.

In 2013, in accordance with the data in these statistics, total catches by Spanish fishing vessels (referring to live weight) have increased by 16.4%, having exceeded the 757,829 t caught in 2012 and the 882,309 caught in 2013.

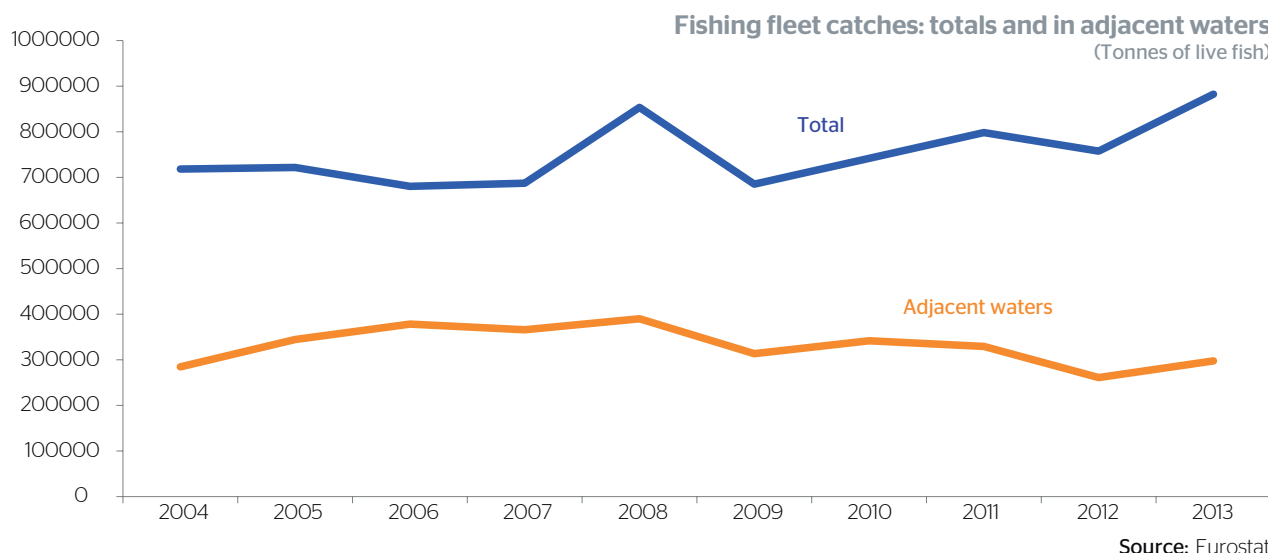
Over the last 10 years (2004-2013) the EU-27 has reduced total catches (live weight) by 36.7%, while in Spain they have increased 22.8%.

Likewise, fishing catches made by the fishing fleet in adjacent waters are in line with the same trend. In the last year, a decrease of 13.9% has been experienced, going from the 261,406 t caught in 2012 to 297,785 t in 2013. In the ten years from 2004-2013, catches in adjacent waters only grew by 4.6%, an inferior figure to the 22.8% for total catches mentioned above.

In these same adjacent waters, but by geographical area, one can observe how in the last year, with the exception of the Canary zone where volume has fallen, that the other zones have suffered a similar pattern, recording an increase in catch numbers.

The Gulf of Cádiz and Portugal zone, which in 2012 had experienced a reduction of 20.7% and in 2013 registered major annual increase (40.2%) reached catches of 90,148 t.

To a lesser extent, the North-East Cantabrian Sea zone, unlike in 2012 when it registered a major reduction of 26.8% in the volume of catches, in 2013 experienced an increase of 12.9% reaching 113,594 t. Catches in the Mediterranean zone grew by 5.1% to 82,999 t and only in the Canary area did the level of catch reduce, by 36.9% in respect of 2012 with the total volume of catches being 11,044 t.



#### Definition of the Indicator:

The indicator shows the evolution of the volume of total catches of the Spanish fishing fleet in national waters and in some other fishing grounds.

#### Methodological Notes:

- In the Mediterranean, North-East Cantabrian Sea, Gulf of Cádiz and the Canary Islands ZONES the EUROSTAT data for the coastal regions of "Mediterranean and Black Sea", "North-East Atlantic, zone R27-08c", "North-East Atlantic, zone R27-09a" and Central East Atlantic, zone 34.1.2" have been respectively used.
- Live weight is understood as the weight of the product when recently extracted from the water (that is, before transformation) but excluding those products that, for whatever reason, are not landed. In Spain, the Maritime Fishing Catch and Landing Statistics are gathered by the National Statistical Plan (PEN, as per the Spanish acronym).
- The PEN 2013-2016, currently in force, gathers information on maritime fishing catches of the Spanish fishing fleet in different fishing grounds and fishing zones, on the landing of maritime fishing in Spain and on the value reached in the first sale of the fishing products.
- In the European Union there are various regulations that require the gathering of statistics on catches and landing, among them, Regulation 199/2008, of the Council, establishing the community framework for the gathering, handling and use of the fisheries sector data and the scientific advice in relation to the Common Fisheries Policy.

#### Sources:

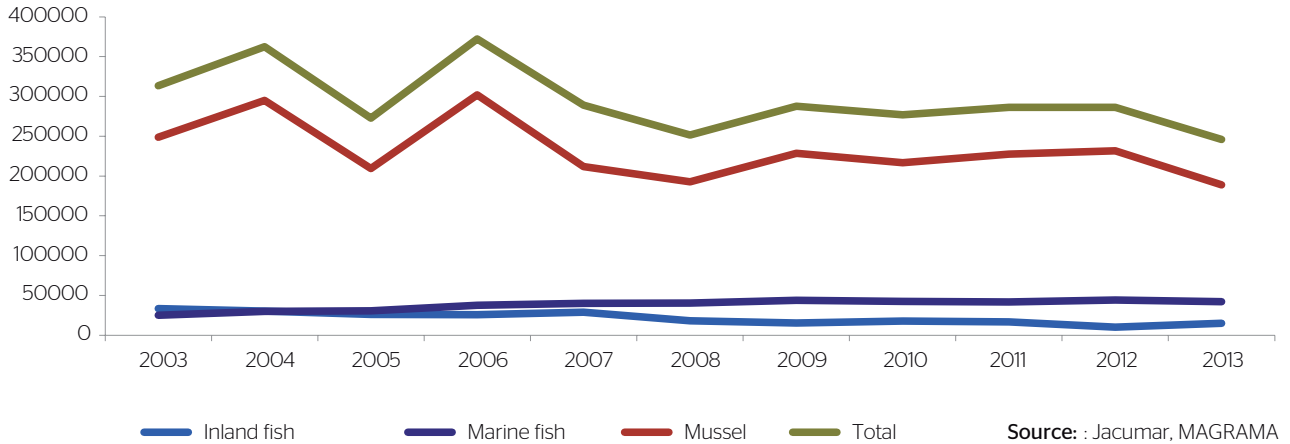
- [EUROSTAT: Statistics / Statistics by theme / Agriculture and fisheries / Fisheries / Data Base / Total all fishing areas.](#)
- [EUROSTAT: Statistics / Statistics by theme / Agriculture and fisheries / Fisheries / Data Base / Catches by fishing area / Mediterranean and Black Sea](#)
- [EUROSTAT: Statistics / Statistics by theme / Agriculture and fisheries / Fisheries / Data Base / Catches by fishing area / East-central Atlantic Canary Islands](#)
- [EUROSTAT: Statistics / Statistics by theme / Agriculture and fisheries / Fisheries / Data Base / Catches by fishing area / North-east Atlantic: 1985 onwards North-East Cantabrian Sea](#)
- [EUROSTAT: Statistics / Statistics by theme / Agriculture and fisheries / Fisheries / Data Base / Catches by fishing area / North-east Atlantic: 1985 onwards Golfo Cádiz Portugal](#)

#### Recommended Websites:

- <http://www.magramagobes.es/pesca/temas/>
- <http://ec.europa.eu/eurostat/web/fisheries/data/main-tables>

## Aquaculture production

Aquaculture production in Spain  
(Tonnes)



Aquaculture production fell by 13.6% in 2013 to 250,741 t

World aquaculture production has grown continuously over the last five decades at a rate of 3.2% annually, exceeding the rate of world population growth which is 1.6%.

At present, data are offered by the National Advisory Board for Marine Farming (JACUMAR, as per the Spanish acronym), which is responsible for facilitating coordination and cooperation in aquaculture between central and regional administrations. In 2013, total aquaculture production in Spain fell by 13.6% in respect of 2012, reaching 250,741 t. This decrease is due, fundamentally, to the fall in mussel production in the last year.

From total national production, 234,634 t corresponded to marine aquaculture and 16,107 t to continental aquaculture. In terms of annual variation of these two groups, it can be observed that inland aquaculture production decreased by 19.2%, while marine aquaculture production increased by 34.6% in 2012.

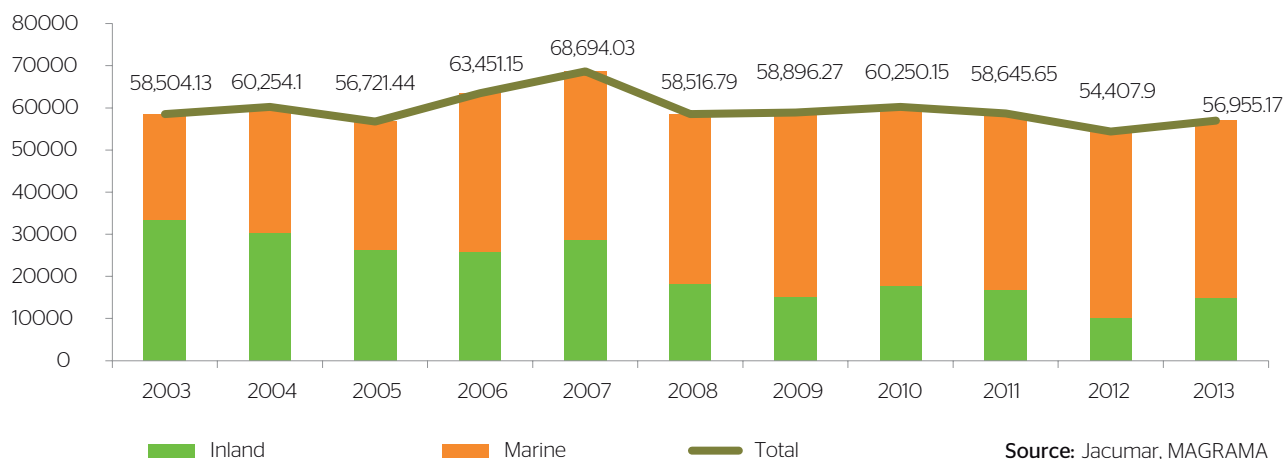
In relation to aquaculture production only of fish, both continental and marine, one observes that marine production of fish experienced a reduction of 4.8%, at 42,083 t, while continental fish production experienced a notable increase of 45.5% (principally due to the increasing fattening of the rainbow trout), reaching 14,872 t in 2013.

In terms of the fattening patterns of species, it is observed how the "rainbow" trout, which represents almost the entirety of continental aquaculture production (99.3% in 2013) experienced an increase of 48.5% in 2013, going from 9,948 t to 14,774 t. On the other hand, the highest produced species in marine aquaculture in 2013 were, once again, gilt-head bream and sea bass. As for the gilt-head bream, fish fattening fell by 8.4%, reaching 16,336 t and, in the case of the sea bass, a slight decrease of 1.6% was registered for production of 14,455 t in 2013.

The production of mussels, which represents 76.8% of total aquaculture production, experienced a notable decrease of 18.5% in 2013, falling to 188,995 t

Mussel production, which represents 76.8% of total aquaculture production, experienced a notable decrease of 18.5% in 2013, falling from a production of 231,754 t in 2012 to 188,995 t. There are five Autonomous Communities where mussels are cultivated, led by Galicia, whose production represents 98% of the production of this species, followed by Catalonia, Comunidad Valenciana, the Balearic Islands and Andalusia.



**Marine and inland aquaculture: fish production**  
 (tonnes)


In 2013, the number of establishments dedicated to aquaculture production in Spain decreased by 2.1% to 5,025 establishments, of which 4,847 were marine and 178 corresponded to continental waters.

In 2013 there were a total of 5,025 aquaculture establishments functioning in Spain. Of them, 178 were in continental waters and 4,847 were in marine waters

**Definition of the Indicator:**

The indicator studies the evolution of aquaculture production in Spain using the statistics offered by the National Advisory Board for Marine Farming (JACUMAR).

**Methodological Note:**

The Multi-Annual Strategic Plan for Spanish Aquaculture 2014-2020, prepared by the Ministry of Agriculture, Food and the Environment, follows the relaunch of Spanish aquaculture in productive, economic and employment terms. In it 8 strategic lines are defined that cover key aspects for the development of the sector, with the aim that Spanish aquaculture continues to lead European aquaculture.

**Sources:**

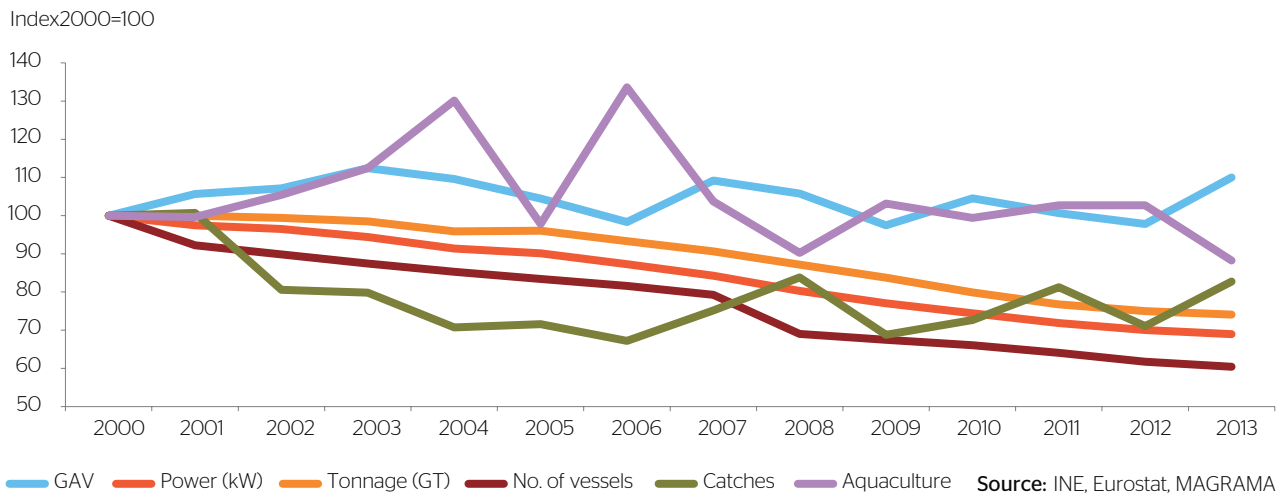
- [JACUMAR, National Advisory Board for Marine Farming. Ministry of Agriculture, Food and the Environment.](#)

**Recommended Websites:**

- <http://www.magrama.gob.es/es/pesca/temas/>
- <http://www.magrama.gob.es/es/pesca/temas/acuicultura/>
- <http://www.apromares/content/informes-anauales>
- <http://www.fundacionoesa.es/>

## Environmental efficiency in the fishing and Aquaculture Sector

Environmental efficiency in the fishing and aquaculture sector



In the period 2000-2013, the variables studied associated with the fisheries sector can be summarised as follows:

- An increase in GVA associated to the activity of 10%
- The volume of catches decreased by 17.3% and aquaculture by 11.7%
- All this with fewer resources, with the number of vessels falling by 39.6%, power by 31.0% and tonnage by 25.9%

For an overall analysis of the evolution of the fisheries sector and aquaculture from the point of view of environmental efficiency, the economic profitability of the sector will be correlated with the pressure exerted by the principal variables that characterize it.

In the evolution of the principal variables that characterize the fisheries and aquaculture sector in Spain during the reference period, 2000-2013, one can observe how the number of vessels, power (expressed in kW) and tonnage (GT) have experienced continuous reductions over the period.

This structural adjustment is due fundamentally to the adaptation measures for community fleets contained in the Common Fisheries Policy (CFP), which are intended to ensure that fishing and aquaculture are sustainable from an environmental, economic and social perspective. For the period in question (2000-2013), the number of vessels experienced a 39.6% reduction, while the power and tonnage fell by 31% and 25.9%, respectively. In the last year, these variations have been less acute, due to the introduction in the sector of successive guidelines established in the Common Fisheries Policy. Similarly, in the year 2013 the number of vessels fell by up to 9,510 vessels (2.2%), power was measured at 550,709 kW (1.5%) and tonnage reached 154,065 GT (1.2%).

As for catches, one can observe in the graph above how for the same period (2000-2013) they experienced a more irregular pattern with two sharp increases in 2008 and 2011 that did not reach the recorded maximum of 2001. They also present an upturn in volume of catches for the final year by 16.4%, going from 757,827 t in 2012 to 882,309 t in 2013. Over the full period of reference, the reduction in catch volumes was 17.3%.

The development and modernization of aquaculture continues apace and it is now an important source of quality food production in the EU. In Spain, for the reference period 2000-2013 the pattern observed in the aquaculture sector is more irregular and closely linked to mussel production which represents 76.8% of aquaculture production, in 2013, mussel production experienced a notable reduction of 18.5% which translates into an annual reduction in aquaculture production of 14.1%, and which has caused an 11.7% reduction in aquaculture production in comparison to the reference period (2000-2013).

Finally, in economic terms, 2013 witnessed a 12.5% decrease in the Gross Value Added (GVA) of the sector devoted to Agriculture, Livestock and Fisheries (see methodological note) going by current prices. In 2012, this value was 23.634 billion Euros, while in 2013 it was 26.578 billion Euros. The evolution of the GVA for the period 2000-2013 presents an increase of 10.0%.

In summary, over the period 2000-2013, the GVA associated with the fisheries and aquaculture sector (which includes agriculture, fisheries, hunting and forestry) increased by 10.0%, economic growth which has been produced within a productive framework in which the volume of catches by the fishing fleet has fallen by 17.3% and aquaculture production as a whole by 11.7%. With regard to the resources used, the number of vessels experienced a 39.6% reduction, while the power and tonnage fell by 31% and 25.9%, respectively.

#### Definition of the Indicator:

This indicator shows the relation between the Gross Value Added (GVA) for agriculture, livestock and fisheries and the evolution of the variables that characterize the Spanish fishing and aquaculture sector (number of vessels, fishing fleet capacity and catches).

#### Methodological Notes:

- The Gross Value Added in the sector refers to agriculture, fishing, hunting and forestry.
- For the purpose of calculating the indicator, environmental performance is considered positive when the trend in the sector's economic growth is decoupled (contrary and divergent) from that of the pressures it exerts on the environment.

#### Sources:

- GVA: Spanish National Accounting. INE
- No. of ships, power and tonnage: General Secretariat of the Sea. Ministry of Agriculture, Food and the Environment.
- Catches: EUROSTAT: Statistics / Statistics by theme / Agriculture and fisheries / Fisheries / Data Base / Total all fishing areas
- Marine aquaculture: Jacumar, General Secretariat of the Sea. Ministry of Agriculture, Food and the Environment.

#### Recommended Websites:

- <http://www.magrama.gob.es/pesca/temas/>
- <http://epp.eurostat.ec.europa.eu/portal/page/portal/fisheries/data/database>
- <http://www.apomares/content/informes-anales>



# TOURISM 2.15

According to the latest barometer of the World Tourism Organization from January 2015, the number of international tourists in 2014 reached 1.138 billion, 51 million more than in 2013, representing an increase of 4.7%.

This figure consolidates, for the fifth consecutive year, the continuous growth being experienced since 2009, the year in which a total number of 891 million international tourists was recorded.

| Main inbound world tourism data. Years 2013 and 2014 |                                 |                                 |                         |
|--|---------------------------------|---------------------------------|-------------------------|
| Tourist destinations                                 | No. of tourists 2013 (millions) | No. of tourists 2014 (millions) | 2013/-2014 increase (%) |
| Europe   | 566.3                           | 588.4                           | 3.9                     |
| Asia-Pacific   | 249.8                           | 263.0                           | 5.3                     |
| America (North and South)                            | 168.1                           | 180.6                           | 7.4                     |
| Middle East  | 48.2                            | 50.3                            | 4.4                     |
| Africa   | 54.7                            | 56.1                            | 2.6                     |
| <b>World TOTAL</b>                                   | <b>1,087</b>                    | <b>1,138</b>                    | <b>4.7</b>              |

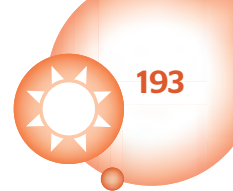
Source: World Tourism Organization. "World Tourism Barometer". January 2015

Once again, Europe led the way in terms of growth in absolute terms, with an increase between 2013 and 2014 of 22.1 million tourists, receiving a total of 588.4 international tourists. The Mediterranean zone, with 215.2 million and an annual increase of 7% was the European subregion with the greatest number of visits received from international tourists in 2014.

In relative terms, the greatest growth was experienced in the Americas (North and South America), with an increase of 7.4% (against 3.9% in Europe). In this destination the number of international tourists grew by 12.5 million, reaching 180.6 million tourists. In other destinations, international tourist arrivals in Asia and the Pacific registered an increase of 5.3%, the Middle East 4.4% and Africa 2.6%.

In 2014 Spain reached 65 million foreign tourists, registering a 7.1% increase in respect of the previous year, the most popular destinations were the Autonomous Communities of Catalonia, the Canary Islands and the Balearic Islands. What's more, in 2014, visitors to the 15 Parks that make up the Network of National Parks exceeded 14 million.

On the subject of nature tourism it is important to highlight that the figure for visitors to the Sierra de la Guadarrama National Park (the latest National Park to be incorporated into the Network in June 2013) exceeded the number of visits at the rest of the National Parks.



In this sense, it is convenient to highlight the various initiatives adopted in 2014 and that condition the regulation of tourist activities in these natural environments. Among them are the **Sectoral Plan of Nature Tourism and Biodiversity 2014-2020**, approved under Royal Decree 416/2014, of 6 June. Its aim is to provide impetus for and promote nature tourism in Spain as an economic activity that generates revenue and employment, and that values biodiversity ensuring conservation of the natural value of the territory while contributing to its sustainable use. For its part, **Law 30/2014, of 3 December, on National Parks**, regulates, among other aspects, its management and the activities that take place there, including tourist activities.

### Foreign tourists per inhabitant

- In 2013, the number of foreign tourists per inhabitant reached a rate of 1.39.
- The Balearic Islands (10.3 tourists/inhabitant), along with the Canary Islands (5.45 tourists/inhabitant) and Catalonia (82.24 tourists/inhabitant) are the Autonomous Communities that see tourist numbers above the average.
- In absolute terms, Catalonia receives 25.9% of all foreign tourists that visit Spain.

### Foreign tourists per km of coastline

- In 2014, the number of foreign tourists per km of coastline increased by 6.8%, reaching 7,418 tourists per km.
- 58.4 million foreign tourists visited our coasts in 2014, which represents 89.9% of all foreign tourism received.

### Equivalent Tourist Population (ETP) in areas with the highest number of overnight stays in hotels

- The Equivalent Tourist Population (ETP) for the 10 destinations with the highest number of overnight stays in hotels was 475,037 people in 2014.
- The island of Majorca hosted 23.3% of this ETP in 2014.

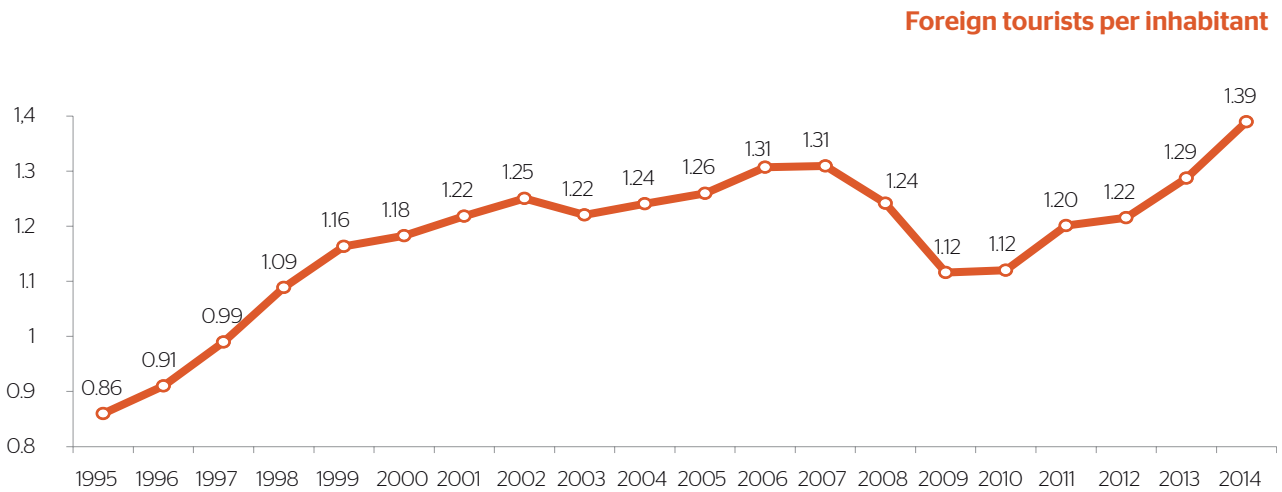
### Number of visitors to National Parks

- In 2014, the number of visitors to our National Parks increased by 24% on the previous year.
- In its first year after being declared a National Park, the Sierra de Guadarrama National Park received 3,388,000 visitors.

### Rural tourism: accommodation, capacity, tourists and overnight stays

- Compared to 2013, in the year 2014 the number of rural stays increased by 0.9% and the number of beds on offer by 1.2%. In terms of use of this offer, the number of overnight stays has increased by 11% and the number of travellers by 11.8%

## Number of foreign tourists per inhabitant



Source: INE, IET

In 2013, the number of foreign tourists per inhabitant reached a rate of 1.39

The Balearic Islands (10.3 tourists/inhabitant), along with the Canary Islands (5.45 tourists/inhabitant) and Catalonia (2.24 tourists/inhabitant) are the Autonomous Communities that see tourist numbers above the average

In absolute terms, Catalonia received 25.9% of all foreign tourists that visit Spain

In 2014, Spain received a total of 65 million foreign tourists, 71% more than in 2013 when the figure was 60.7 million tourists. This data consolidates, for the sixth consecutive year, the increasing trend in absolute terms which began in 2009. If one takes into account that the Spanish population fell by 0.8% in 2014 to 46.7 million inhabitants, the annual trend in the number of foreign tourists and number of inhabitants shows a positive increase over recent years with a rate last year of 1.39 tourists per inhabitant.

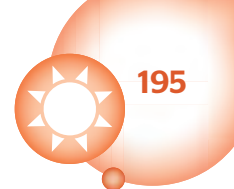
The number of tourists per inhabitant is not distributed homogeneously throughout the different Autonomous Communities and there is great inequality between the different regions. In this respect, only three Autonomous Communities exceed the national average, the Balearic Islands with 10.3 tourists/inhabitant, followed by the Canary Islands with 5.45 tourists/inhabitant and Catalonia with 2.24 tourists/inhabitant. With figures in and around the average are Comunidad Valenciana (1.25 tourists/inhabitant) and Andalusia (1.01 tourists/inhabitant) and the rest of the Autonomous Communities present figures further from the average. The regions with the lowest rates are Castilla-La Mancha, with 0.09 tourists/inhabitant, and Extremadura, with 0.18 tourists/inhabitant.

In absolute terms, in 2013 the region that received the greatest number of foreign tourists was Catalonia with 16.8 million (25.9% of the total), followed by the Canary Islands and the Balearic Islands with 11.5 and 11.4 million foreign tourists and 17.7% and 17.5% of the total respectively. Further adrift are Andalusia and Comunidad Valenciana with 8.5 and 6.2 million tourists and 13.1% and 9.6% of the total respectively. La Rioja, with 61,024 foreign tourists and 0.1% of the total was the Autonomous Community with the smallest number of visitors registered in 2014.

In 2014, the principal form of transport used by tourists to reach Spain was air travel; 51.8 million tourists opted for this form (79.7% of the total) compared to 11.9 million who arrived by road (18.5% of the total) and 0.9 million arrived via sea port (1.4% of the total). Railways was the least utilized form of entry, used by only 0.3% of foreign tourists.

In the evolution of the means of entry over the last year, one can observe that in the case of rail transport, which is not very representative in absolute terms, the number of tourists has grown by 162.7%, going from 115,816 tourists to 304,210 foreign tourists in 2014. Also very significant is the 9.8% increase in the number of tourists that chose to come to Spain by road. To a lesser extent, air transport and sea transport also increased by 6.3% and 0.8% respectively.

Over the last ten years (2005-2014), with the exception of air travel, which grew by



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TOURISM



27.2%, other forms of transport experienced negative growth, 35% in the case of sea ports, 8.9% in the case of road transport and 4.9% in the case of rail travel.

#### Arrival of non-resident tourists by means arrival 2005-2014

|              | 2005              | 2013              | 2014              | Change 2014/2013 (%) | Change 2014/2005 (%) |
|--------------|-------------------|-------------------|-------------------|----------------------|----------------------|
| Airport      | 40,729,830        | 48,762,922        | 51,822,859        | 6.3                  | 27.2                 |
| Road         | 13,118,561        | 10,889,147        | 11,953,093        | 9.8                  | -8.9                 |
| Seaport      | 1,408,273         | 907,604           | 915,142           | 0.8                  | -35.0                |
| Rail         | 319,850           | 115,816           | 304,210           | 162.7                | -4.9                 |
| <b>TOTAL</b> | <b>55,576,514</b> | <b>60,675,489</b> | <b>64,995,304</b> | <b>7.1</b>           | <b>16.9</b>          |

Source: IET

#### Definition of the Indicator:

This indicator studies the relationship between the number of foreign tourists and the resident population.

#### Methodological Notes:

- This indicator relates the number of foreign tourists to the resident population. It is useful to show the tourist load of different tourist destinations, but it is also desirable to maintain a balance between the number of visitors and the resident population in order to ensure the sustainability of this sector. On a national level, this rate is lower than the one recorded in surrounding countries, such as France and Italy, but it has increased considerably in the Mediterranean coastal areas and, especially, in the three above referred Autonomous Communities.
- The term "tourist" is understood as a person who travels from his/her place of residence to another population and stays there for at least one night for reasons other than carrying out a paid activity.

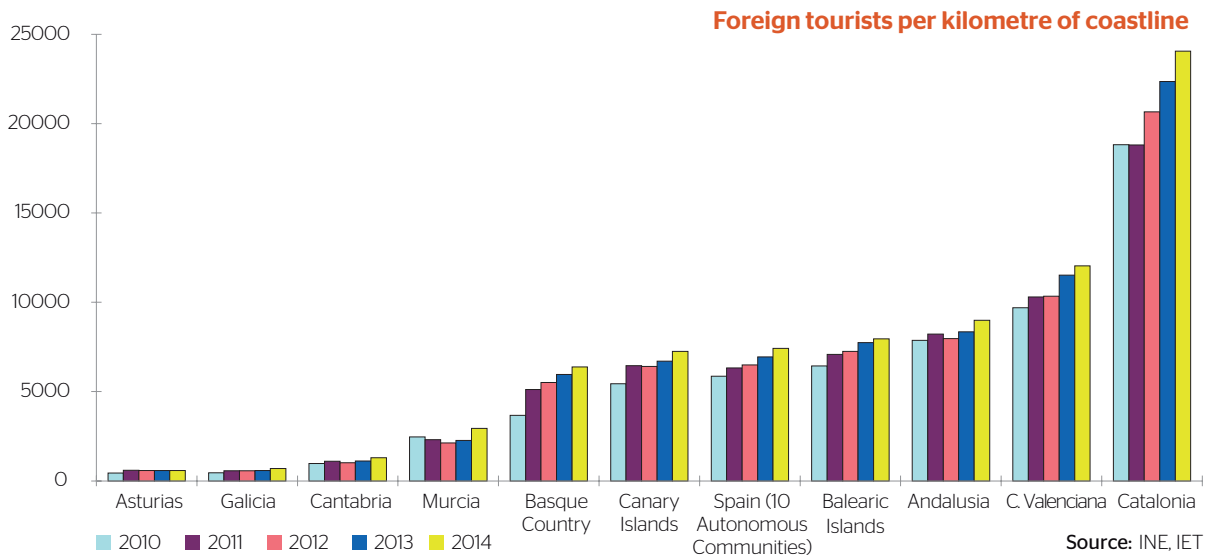
#### Source:

Institute for Tourism Studies. *Tourist Movement on Borders (FRONTUR). 2013 (provisional data)*

#### Recommended Websites:

- <http://www.iet.tourspain.es>
- <http://www.iet.tourspain.es/es-ES/turismobase/Paginas/default.aspx>
- <http://www.iet.tourspain.es/es-ES/estadisticas/frontur/informesdinamicos/paginas/anual.aspx>

## Foreign tourists per km of coastline



In 2014 the number of foreign tourists per km of coast increased by 6.8% reaching 7,418 tourists per km

58.4 million foreign tourists visited our coasts in 2014, which represents 89.9% of all foreign tourism received

The trend over the last five years in the number of foreign tourists per kilometre of coast shows the notable imbalance between the distribution of foreign tourists between Atlantic and Mediterranean destinations.

In terms of Mediterranean destinations, Catalonia reached 24,045 tourists per km of coastline in 2014, followed by Comunidad Valenciana which reached 11,528 tourists per km.

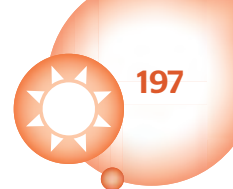
Andalusia, with parts of its coastline on the Atlantic Ocean, was in third place with 8,347 tourists per km. These Communities, along with the Balearic Islands (7,960 tourists per km) exceed the average rate for Spain, which was 7,418 per km of coastline in 2014, 6.8% higher than registered the previous year.

At the other end of the spectrum, with the exception of the Basque Country which reaches 6,381 tourists per km of coastline, are the Autonomous Communities of the Cantabrian Sea; Asturias (590 tourists per km), Galicia (701 tourists/km) and Cantabria (1,300 tourists/km) with the lowest figures for 2014.

In absolute terms, in 2014 58.4 million foreign tourists visited the Spanish coasts which represented 89.9% of the total foreign tourism received. Once again, Catalonia, with 16.8 million foreign visitors, was the region with the highest number of tourists, followed by the Canary Islands with 11.5 million and Balearic Islands with 11.4 million, while Asturias and Cantabria with 232,523 and 369,138 tourists, respectively, were the coastal regions with the lowest levels of foreign tourism.

The number of tourists have increased in all Autonomous Communities in the last year, with the most significant increase registered in Murcia (29.5%), Galicia (20.7%) and Cantabria (16.8%). The lowest increases were experienced in the regions of Asturias (1.2%) and the Balearic Islands (2.8%). Over the last ten years (2005-2014),





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TOURISM

| Foreign tourists per km of coastline     |              |              |                      |                      |
|--|--------------|--------------|----------------------|----------------------|
| Autonomous Communities                   | 2013 (No.)   | 2014 (No.)   | 2013-2014 Change (%) | 2005-2014 Change (%) |
| Asturias                                 | 583          | 590          | 1.2                  | 3.6                  |
| Galicia                                  | 581          | 701          | 20.7                 | -11.5                |
| Cantabria                                | 1,113        | 1,300        | 16.8                 | -7.2                 |
| Murcia                                   | 2,270        | 2,940        | 29.5                 | 62.6                 |
| Basque Country                           | 5,967        | 6,381        | 6.9                  | 62.3                 |
| Canary Islands                           | 6,709        | 7,249        | 8.0                  | 21.5                 |
| Balearic Islands                         | 7,743        | 7,960        | 2.8                  | 17.7                 |
| Andalusia                                | 8,347        | 8,997        | 7.8                  | 1.8                  |
| Comunidad Valenciana                     | 11,524       | 12,035       | 4.4                  | 15.4                 |
| Catalonia                                | 22,363       | 24,055       | 7.6                  | 19.9                 |
| <b>Spain (10 Autonomous Communities)</b> | <b>6,942</b> | <b>7,418</b> | <b>6.9</b>           | <b>16.5</b>          |

Source: prepared by the authors

the Autonomous Communities show different trends. Murcia (62.6%) and the Basque Country (62.3%) present the highest growth rates in number of foreign tourists per kilometre of coastline, followed at a greater distance by the Canary Islands (21.5%) and Catalonia (19.9%). At the other end of the spectrum, those regions that have experienced a decline in the number of tourists per km of coastline are Galicia (-11.5%) and Cantabria (-7.2%).

In coastal areas, 43.7 million foreign tourists visited the Mediterranean coast (74.8% of the total); 3.2 million foreign tourists (5.5% of the total) stopped along the Cantabrian and Galician coast, while 11.5 million chose the Canary Islands as a tourist destination (19.7% of the total). These figures represent a rate of 11,315 tourists per km of coastline for the Mediterranean area, 1,328 for the northern area and 7,249 for the Canary Islands.

### Definition of the Indicator:

This indicator establishes the ratio between the number of foreign tourists visiting the Spanish coasts and the length of same.

### Methodological Notes:

- The coast length considered for the calculation of this indicator is the one provided by the INE (coast length by provinces) with data supplied by the Directorate-General of the National Geographic Institute. Total coast length of the provinces considered is 7,876 km (excluding minor islands and islets of peninsular provinces).
- This institution also provides other data taking the coast by sections, which results in the figures below: Cantabrian Coast: 1,086 km; Atlantic Coast: 1,728 km; Mediterranean Coast: 2,058 km; Balearic Islands: 1,428 km; Canary Islands: 1,583 km; Ceuta, Mellilla, Chafarinas and islets: 32 km. Total: 7,915 km.

### Sources:

- Institute for Tourism Studies. Survey on tourist movements on borders (FRONTUR), 2013 (provisional figures)
- INE. Physical environment. Length of coasts and borders. Coast length by province.

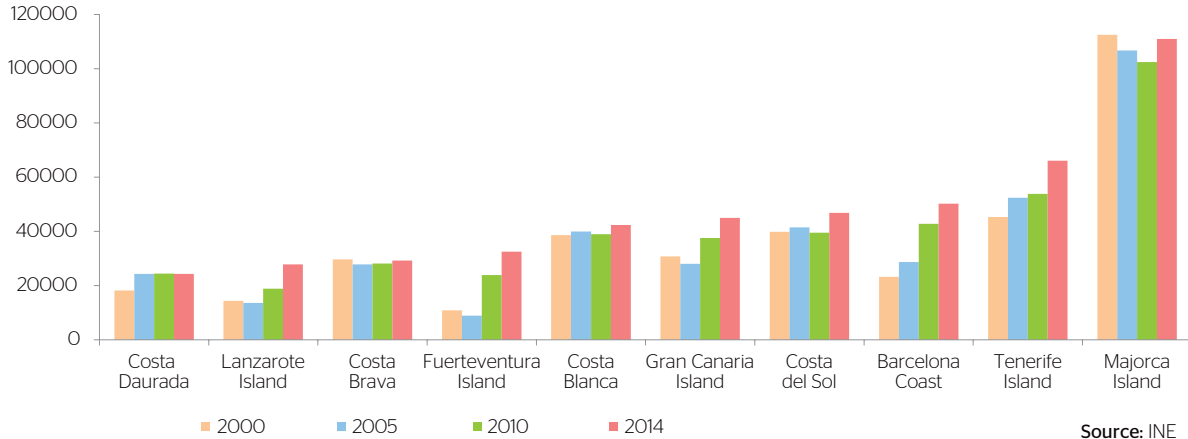
### Recommended Websites:

- <http://www.iet.tourspain.es>
- <http://www.magrama.gob.es/es/costas/temas/default.aspx>
- <http://www.iet.tourspain.es/es-ES/turismobase/Paginas/default.aspx>
- <http://www.iet.tourspain.es/es-ES/estadisticas/frontur/informesdinamicos/paginas/anual.aspx>

## Equivalent Tourist Population (ETP) in areas with the highest number of overnight stays in hotels

### Equivalent Tourist Population in areas with the highest number of overnight stays in hotels

Equivalent Tourist Population (2000-2014)=6,033,294



The Equivalent Tourist Population (ETP) for the 10 destinations with the highest number of overnight stays in hotels was 475,307 people in 2014

The island of Majorca hosted 23.3% of this ETP in 2014

Conceptually, the Equivalent Tourist Population (ETP) allows us to visualize better the load supported by areas of high tourism, as it converts the overnight stays of tourists into their equivalent “number of people residing there all year”.

In 2004 the areas with the highest levels of tourism were coastal destinations. The island of Majorca, with 40.5 million overnight stays (ETP of 110,975) was the area with the greatest concentration, although it lost 4.3% of overnight stays in respect of 2013. Behind it are the island of Tenerife with 24.1 million overnight stays (ETP of 66,028) and an increase of 3.0%, the Barcelona coast with 18.3 million overnight stays (ETP of 50,204) and an increase of 5.6%, the Costa del Sol, with 17.1 million overnight stays (ETP of 46,853) and an annual increase of 4.9% and the island of Gran Canaria with 16.4 million overnight stays (ETP of 44,941) and an annual increase of 6.7%.

Within the list of the ten tourist areas with the highest number of overnight stays, the island of Lanzarote has consolidated its position as a tourist destination. In 2014, it rose another position and with more than 10.1 million overnight stays and an annual increase of 12.2% (ETP of 27,800) it occupied ninth place, exceeding the Costa Dorada's 8.9 million overnight stays which, with a reduction of 3.6% in 2014, fell back to tenth place. The 8.1 million overnight stays registered in Ibiza-Formentera (ETP of 23,378) see this area fall outside of the top ten areas with highest number of highest overnight stays, in a change from 2013.

Overall, these 10 areas with higher tourist inflows received a total of 173.5 million overnight stays, which in terms of ETP translates into a total of 475,307 people.

The Pyrenees tourist area is the only non-coastal area covered by the Hotel Occupancy Survey (EOH). In 2014 it received 2.9 million overnight stays, equivalent to an ETP of 8,020 inhabitants.

| Equivalent Tourist Population (ETP) in the 10 areas with greatest number of overnight hotel stays (2000-2014) |         |         |         |         |         |         |         |                  |
|---|---------|---------|---------|---------|---------|---------|---------|------------------|
|   | 2000    | 2001    | 2002    | 2003    | 2004    | 2005    | 2006    | 2007             |
| PTE (inhabitant)  | 363,443 | 364,260 | 346,733 | 358,709 | 356,312 | 372,199 | 412,118 | 410,352          |
| Index; 1990=100   | 100.0   | 100.2   | 95.4    | 98.7    | 98.0    | 102.4   | 113.4   | 112.9            |
|   | 2008    | 2009    | 2010    | 2011    | 2012    | 2013    | 2014    | TOTAL            |
| ETP   | 410,338 | 384,227 | 410,620 | 452,976 | 451,356 | 464,343 | 475,307 | <b>6,033,294</b> |
| Index; 1990=100   | 112.9   | 105.7   | 113.0   | 124.6   | 124.2   | 127.8   | 130.8   |                  |

Source: Data compiled by authors from the INE data

Over the period 2000-2014, one observes that overnight stays reached 2.202 billion overnight stays, which translated into an ETP of 6,033,294 more inhabitants. By areas, the island of Fuerteventura experienced the greatest increase in this period (199.1%), followed by the Barcelona coast (116.2%) and the island of Lanzarote (93.3%). For this period, only the Costa Brava and the island of Majorca experienced a slight decrease, of 1.6% and 1.4% respectively.

### Definition of the Indicator:

This indicator studies the evolution of the number of overnight stays of resident and non-resident tourists, calculated as the Equivalent Tourist Population (EPT), in the ten areas with the highest levels of tourism, compiled in the Hotel Occupancy Survey (EOH), published annually by the National Institute of Statistics (INE), highlighting their evolution during the period from 2000 to 2014 in the most significant areas.

### Methodological Notes:

- The ETP indicator is calculated by dividing the number of overnight stays of resident and non-resident tourists in hotels by 365 days. From an environmental perspective, the interest in this indicator lies in focusing our attention on the areas with the highest levels of tourism, by monitoring its evolution over time.
- The most popular tourist destinations in Spain are, in general, "mature" destinations, among them are the ten areas selected for this indicator, areas that need to be given special treatment on the part of all those involved in order to achieve a full conversion of the sector towards sustainability.

### Source:

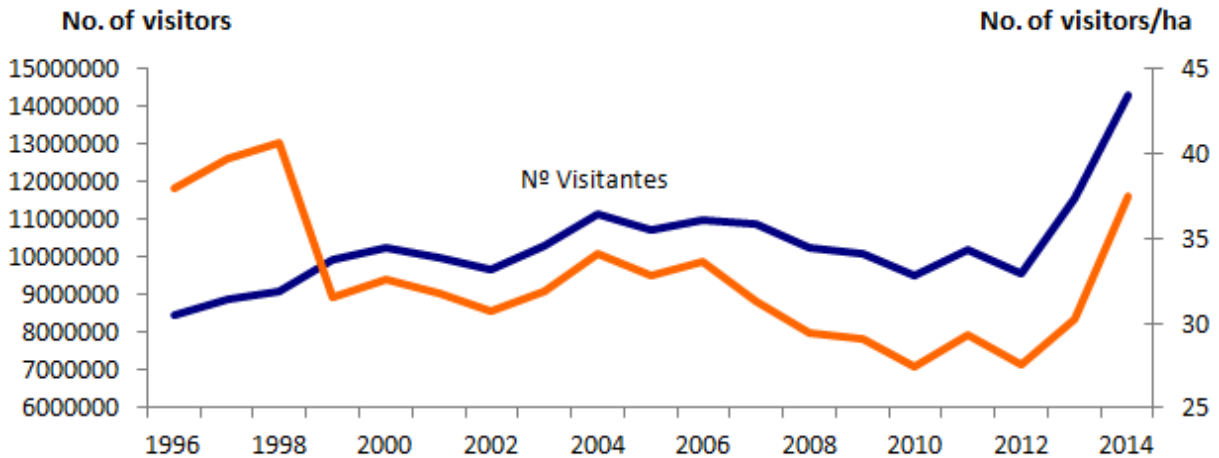
INE: Hotel Occupancy Survey (EOH) 2000-2013. Hotels and other hotel establishments

### Recommended websites:

[http://www.ine.es/inebmenu/mnu\\_hosteleria.htm](http://www.ine.es/inebmenu/mnu_hosteleria.htm)



## Number of visitors to National Parks



Source: Autonomous Body of National Parks (OAPN). MAGRAMA

The National Park concept is approaching one hundred years of history in Spain. The Act of 7 December 1916 selected a group of natural beauty spots for conservation for their natural value and the enjoyment of society. After almost a century of transformations in different spheres, and with the recent approval of Act 30/2014 on National Parks, the essence of this model remains unaltered in terms of the exceptional status and symbolism it carries, aside from the natural wealth, general social recognition and aesthetic, cultural, educational and scientific values it highlights.

In 2014, the Tablas de Daimiel National Park was extended by 1,102.52 hectares with the incorporation of adjoining lands complementary to the natural systems represented in the park. Thus, the 15 National Parks that currently make up the Network represent 0.76% of the national territory and a surface area of 381,716.5 hectares, which makes for an increase of close to 10% in protected spaces.

Regarding the evolution of the number of visitors to the National Parks, a 24% increase is observed for 2014 with an amount of 14,307,591 visitors compared to 11,538,103 visitors for 2013. This increase was practically spread across all the National Parks, except for the Tablas de Daimiel (-31.8%), Monfragüe (-9.1%) and El Teide (-2.4%) National Parks. The most significant increase in visitors was to the Aigüestortes i Estany de S. Maurici National Park, which saw a 78.4% increase in visitors from 272,372 in 2013 to 485,935 in 2014. This is followed by the Archipiélago de Cabrera and the Picos de Europa National Parks, with increases in the number of visitors of 59.3% and 19.2% respectively.

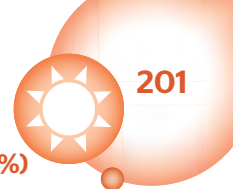
In absolute terms, the Sierra de Guadarrama National Park was the most visited in 2014 with 3,388,000 visitors, followed by the Teide National Park with 3,212,632 visitors and the Picos de Europa National Park with 1,842,272. The National Parks with the lowest number of visitors were the Cabañeros and Archipiélago de Cabrera National Parks, attracting 67,809 and 108,038 visitors, respectively.

With regard to the number of visitors and the surface area occupied by the National Park, in 2014 37.4 visitors/ha were registered compared to 26.8 visitors/ha in 2013. National Parks receiving a higher number of visitors per hectare were the Timanfaya NP (308.4 visitors/ha), followed by the Garajonay NP (217.2 visitors/ha) and the Teide NP (170 visitors/ha). At the other end, those Parks with a lower number of visitors per

In 2014, the number of visitors to our National Parks increased by 24% on the previous year

In its first year after being declared a National Park, the Sierra de Guadarrama National Park received 3,388,000 visitors

## Distribution of energy consumption by means of transport (%)



2.15

TOURISM

| National Parks                                 | Surface area (ha) | Visitors to National Parks Year 2014 |                    |
|--|-------------------|--------------------------------------|--------------------|
|  |                   | 2014                                 |                    |
|  |                   | No. of visitors                      | No. of visitors/ha |
| Aigüestortes i Estany de S. Maurici            | 14,119            | 485,935                              | 34.4               |
| Archipiélago de Cabrera                        | 10,021            | 108,038                              | 10.8               |
| Cabañeros                                      | 40,856            | 88,196                               | 2.2                |
| Caldera de Taburiente                          | 4,690             | 392,990                              | 83.8               |
| Doñana   | 54,252            | 296,777                              | 5.5                |
| Garajonay                                      | 3,984             | 865,493                              | 217.2              |
| Marítimo Terrestre Islas Atlánticas de Galicia | 8,480             | 363,121                              | 42.8               |
| Monfragüe                                      | 18,396            | 253,153                              | 13.8               |
| Ordesa y Monte Perdido                         | 15,608            | 590,050                              | 37.8               |
| Picos de Europa                                | 64,660            | 1,842,272                            | 28.5               |
| Sierra de Guadarrama                           | 33,960            | 3,388,000                            | 99.8               |
| Sierra Nevada                                  | 86,208            | 690,150                              | 8.0                |
| Tablas de Daimiel                              | 3,030             | 155,755                              | 51.4               |
| Teide  | 18,900            | 3,212,632                            | 170                |
| Timanfaya                                      | 5,107             | 1,575,029                            | 308.4              |
| <b>TOTAL</b>                                   | <b>382,271</b>    | <b>14,307,591</b>                    | <b>37.4</b>        |

Source: Autonomous Authority for National Parks. MAGRAMA, 2015

hectare were the Cabañeros NP (2.2 visitors/ha), the Doñana NP (5.5 visitors/ha), as well as the Sierra Nevada NP (8 visitors/ha).

#### Definition of the Indicator:

This indicator studies the annual evolution in absolute and relative terms (based on the surface of same) of the number of visitors to the National Parks that make up the Network of National Parks.

#### Methodological Notes:

- The Network of National Parks is an integrated system for the protection and management of a selection of the best examples of Spanish Natural Heritage. The legal status to guarantee the protection of these natural spaces has suffered many modifications along with the development of society and changes in the administrative organisation of the State.
- 2014 saw the approval of Act 30/2014, on National Parks, which in addition to being a model for the conservation of nature and to guarantee that future generations can enjoy the natural legacy, intends to be an example of more participative management and to be more open to society and the application of the principle of collaboration, coordination and cooperation between different parties to ensure the preservation of its natural values.
- The data gathered in the table on the Sierra de Guadarrama National Park make reference to the visitors recorded during the months of 2013, after it was declared National Park (pursuant to Act 7/2013 of 30 June), and that information only makes reference to the visitors of the section belonging to Castilla y León. Such an imbalance in the number of visitors will be solved in 2014, since by then there will be data available for the entire year and for both sections of the park.
- The Resolution of 21 January 2014, on National Parks, passes the Agreement of the Council of Ministers of 10 January 2014, which extends the boundaries of the Tablas de Daimiel National Park by adding adjacent land for a total surface area of 1,102.52 hectares. Recently, in 2015 the boundaries of the Picos de Europa National Park were extended for a surface area of 2,467.59 hectares. This was the first extension of the Network under the new legislation of Act 30/2014 on National Parks.

#### Sources:

- Data provided by the Documentation Service of the Autonomous Authority for National Parks, 2013.
- Surface areas of National Parks gathered from the technical data sheets of the Network of National Parks. MAGRAMA.

#### Recommended websites:

<http://www.magramagob.es/es/parques-nacionales-oapn>



# TRANSPORT 2.16

Both for its direct participation in the economy and the contribution sectors of the economy, transport is one of the most important sectors in a country's economy.

The contribution of the "Transport and Logistics sector" (which includes postage and courier activities) to total Gross Value Added (GVA) in 2013 was 4.8%, a percentage very similar to in previous years, but with a slight upward trend. In 2008 this value was 4.1%, growing to 4.7% in 2012, defining the afore mentioned growth pattern.

In the period 2000-2013, the growth in GVA of transport was 64%, similar to the total for GVA which was 63.5%. However, in 2013, the growth in total GVA in respect of 2012 was negative (-1.1%) while that corresponding to the sector did present positive growth of 1%, albeit inferior to the previous year which stood at 1.7%.

In terms of employment, the Spanish Labour Force Survey showed, in 2014, a recovery in the total assets of the "Transport and Logistics" sector, given that in 2013 the sector employed 831,700 people while for 2014 this figure was at 852,800, representing an increase of 2.5%, the first since 2008. The contribution of the sector to total GVA was 4.9% in 2014, a figure very similar to previous years. Referring only to transport activities (without considering postage and courier activities) the contribution to the GVA falls to 4.3%.

The Efficient Vehicle Incentive Programme (PIVE Programme) has been one of the initiatives put in place in Spain. The positive results for the four editions already carried out (PIVE, PIVE-2, PIVE-3 y PIVE-4) stand out in environmental terms, for the reduction in CO<sub>2</sub> emissions and other contaminants, in addition to the contribution to improving the commercial trade balance, the generation of economic activity in the automobile sector and auxiliary industries and in others related to it (marketing, insurance and financing of equipment) and, for that matter, the creation and maintenance of employment. These results have seen the preparation of the fifth edition of the Programme (PIVE-5) within the framework of the Energy Efficiency Action Plan 2011-2020, approved by Agreement of the Council of Ministers of 29 July 2011.

In January 2014 the Ministry of Public Works began the public information phase for the Infrastructure, Transport and Housing Plan 2012-2024 (PITVI) and its Environmental Sustainability Report (ISA). In March 2015 it published its Annual Report for 2014, the second report of the Spanish Transport and Logistics Observatory (OTLE). It consists of an instrument for the management, analysis and decision making of administrations and other agents, which form part of the PITVI itself.

### Demand for inter-city passenger and freight transport

- Between 2007 and 2013 the demand for internal freight traffic fell 30.8%, and for passenger transport it fell 10.3%.
- In 2013 the reduction was 1.7% for passenger and 3% for freight. In 2012, the EU-28 showed similar figures, albeit lesser, for these variables.
- Road traffic, both private (91.3%) and commercial (81.3%) remained the most in-demand in 2013.

### Passenger vehicle fleet by fuel type

- In 2013, 55% of passenger vehicle fleet in Spain was motor diesel.
- Since 2009 the number of diesel vehicles gas exceeded the number petrol vehicles.
- The number of hybrid vehicles registered annually exceeds 10,000 units since 2010.

### Environmental efficiency of transport in terms of GVA, demand, emissions to the atmosphere and final energy consumption

- Between 2000 and 2013, GVA for transport has risen 64%, while consumption of energy in the sector fell by 3.2% and emissions were also reduced.
- In the same period the intensity of transport (final energy consumption / GDP) fell by almost 20%.

### Emission of air pollutants from transport

- Emissions from transport have fallen significantly in the period 1990-2013: 92.4% for COVNM; 91.1% for CO<sub>2</sub>; 87.4% for SO<sub>x</sub> y 51.1% for NO<sub>x</sub>.
- Between 2000 and 2013, PM10 emissions have fallen by 45.8% and PM2.5 by 45.8%.
- Between 2001 and 2014, PM10 average CO<sub>2</sub> emissions for private vehicles in Spain (grams/km) have fallen by 24.4%.

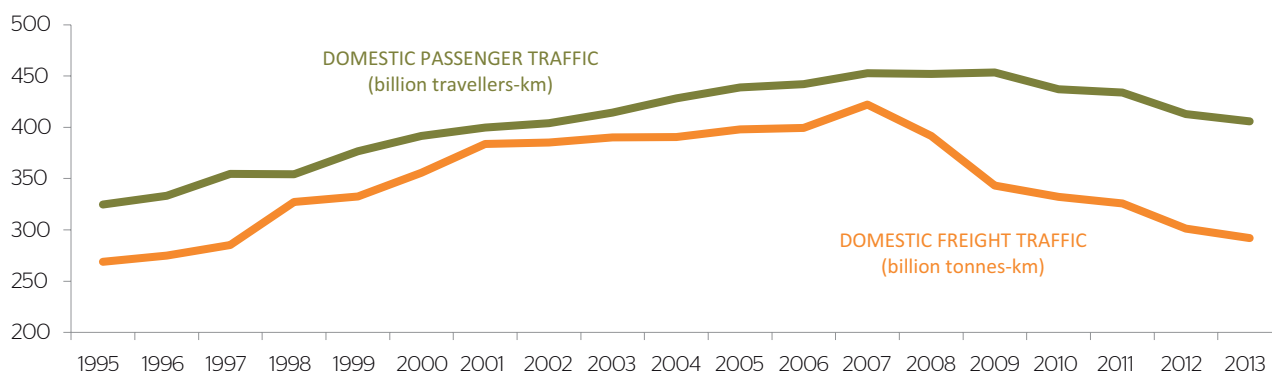
### Energy consumption in transport

- At present Transport is the sector with the greatest final energy consumption, with almost 40% of the total.
- A reduction in final energy consumption has been recorded in recent years: 2008 was the first year in which there was a reduction. In 2013, this reduction was 4.2% in respect of 2012.
- Road transport is the biggest final energy consumer in Transport, followed by air. In 2013, both modes responsible for 95.5% of energy consumption.



## Demand for inter-city passenger and freight transport

### Total volume of inter-city transport



Source: M. Formento

Between 2007 and 2013 the demand for domestic freight traffic fell 30.8%, and for passenger transport it fell 10.3%

In 2013 the reduction was 1.7% for passenger and 3% for freight. In 2012, the EU-28 showed similar figures, albeit lesser, for these variables

Road traffic, both private (91.3%) and commercial (81.3%) remained the most in-demand in 2013

The evolution of the demand for inter-city passenger traffic in Spain reached its peak in 2009, while freight peaked in 2007. Since then, both variables have recorded a decrease in demand, more pronounced for freight transport (reaching 30.8% between 2007 and 2013) than in the case of passenger transport (which was 10.3% less in those years).

This trend was impacted by the economic situation of those years, characterised by a reduction in commercial activity (both in domestic and international) and, consequently, in the transport of freight. In the case of passenger transport, this circumstance, although present, manifested itself with less intensity.

In the distribution of passenger traffic across modes of transport, with a total of 405.73 billion passengers in 2013, road traffic was the most popular (91.3%), followed by rail (6%) and air traffic (2.4%). Maritime traffic accounted for only 0.4%. In respect of 2012, domestic passenger traffic (measured in passengers-km), saw negative growth of 1.7%. Contributing to this decrease were road traffic, which was down 1.9% and air traffic, which fell by 12.4%. For its part, rail traffic grew by 5.7% and maritime traffic by 9%.

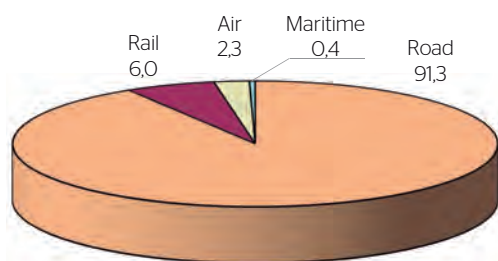
In terms of freight, in 2013 281.32 billion tonnes-km were transported, road transport was also the most in-demand mode (81.3%) followed by maritime transport (12.5%) and pipeline transport (3.7%) and rail (2.5%).

With regard to 2012, freight traffic fell by 3%, across all forms of transport although to varying degrees: 1.9% for road traffic, 1.2% for rail, 5.6% for pipeline, 9.7% for maritime and 20% for air traffic.

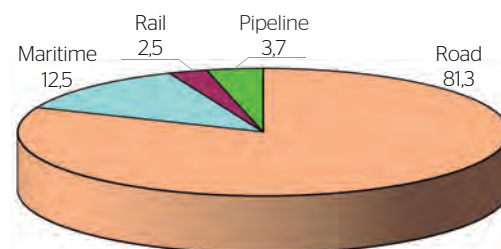
In 2014, total passenger traffic at Spanish airports managed by AENA grew by 4.5%, while the number of operations rose by 2.3%. The year 2011 saw the recovery in part of the air traffic intensity of previous years, surpassing 204 million passengers (the maximum was reached in 2007 with 210.5 million passengers). From that year on, there have been a series of drops in passenger numbers (5% in 2012, 3.5% in 2013). In the EU-28, between 2011 and 2012, demand for passenger transport fell by almost 1.5%. The private vehicle is the most dominant and represents more than 70%. It



**Distribution of means  
of inland passenger transport, 2013**  
(%)



**Distribution of means  
of inland freight transport, 2013**  
(%)



Source: IDAE. MINETUR

is followed by air transport (9%) and rail transport (7%). The latter grew in the last two years, while air transport stabilized in 2012.

For freight transport, road transport was dominant (75%) followed by rail (18%) and inland waterways (7%). The total volume of freight transported also fell by 2% between 2011 and 2012. Transport by road fell 3%, rail fell by 4%, while maritime and air transport have shown little variation since 2012. Freight transport by inland waterways did grow, however (6%).

#### Definition of the Indicator:

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

#### Methodological Notes:

- The unit of measurement used for passenger traffic is passenger-kilometre (pkm) and is calculated by multiplying the annual number of passengers by the number of kilometres travelled.
- The unit of measurement of freight transport is the tonne-km (tkm), calculated by multiplying the number of tonnes transported by the number of kilometres travelled.
- Freight transport by air is scarcely relevant; in 2013 it represented only 0.01% of the total tkm transported that year.
- The road information refers in 2013 to the 165,361 kilometres managed by the State, Autonomous Communities, Provincial Councils and Chapters.

#### Source:

Ministry of Public Works, 2014. "Transport and Infrastructure. Annual Report 2013." Many years.

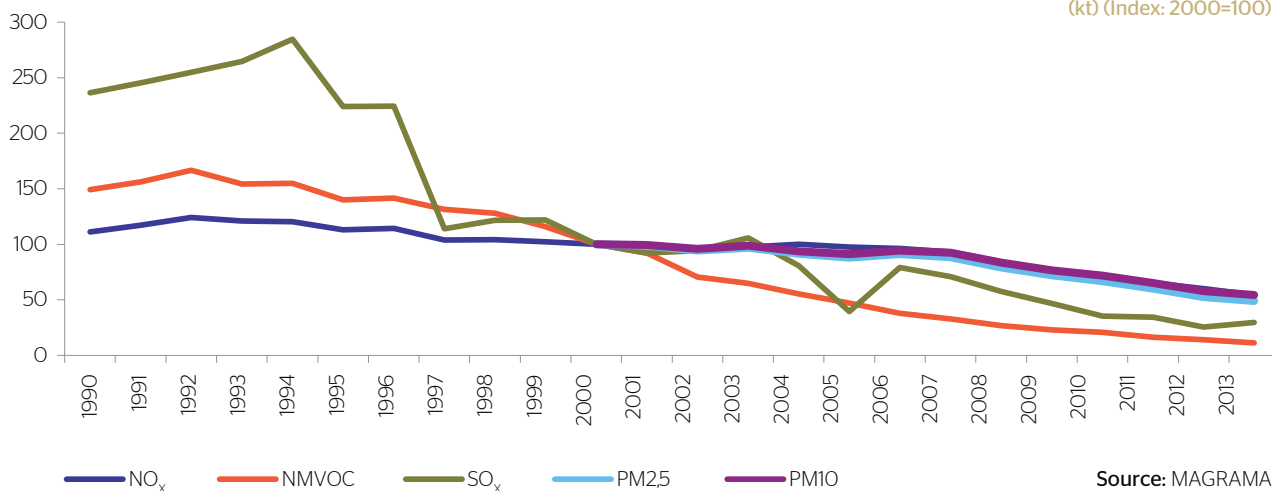
#### Recommended Websites:

- [http://observatoritransportefomentoes/OTLE/lang\\_castellano/](http://observatoritransportefomentoes/OTLE/lang_castellano/)
- [http://www.fomentogobes/MFOM/LANG\\_CASTELLANO/ATENCION\\_CIUDADANO/INFORMACION\\_ESTADISTICA/](http://www.fomentogobes/MFOM/LANG_CASTELLANO/ATENCION_CIUDADANO/INFORMACION_ESTADISTICA/)
- <http://www.eea.europa.eu/publications/term-report-2014>



## Emission of air pollutants from transport

Emissions of air pollutants from transport  
(kt) (Index: 2000=100)



Source: MAGRAMA

Emissions from transport have fallen significantly in the period 1990-2013: 92.4% for COVNM; 91.1% for CO; 87.4% for SO<sub>x</sub> y 51.1% for NO<sub>x</sub>

Between 2000 and 2013 PM10 emissions have fallen 45.8% and PM2.5 some 51.1%

Between 2001 and 2014 average CO<sub>2</sub> emissions from private vehicles in Spain (grammes/km) have fallen by 24.4%

Emissions from transport have experienced an important reduction in recent years. Between 1990 and 2013 the significant reduction in NMVOCs (92.4%) stands out, as does that in CO (91.1%), and SO<sub>x</sub> which fell by 87.4%.

To a lesser extent, but also significant, the decrease in NO<sub>x</sub> emissions (51.1%) is also important.

Referring to the period 2000-2013, particle emissions also experienced pronounced decreases, both in the total of particles with a diameter of less than 10 microns and those with a diameter of less than 2.5 microns. These reductions were of 45.8% and 51.1% respectively.

In the last year the downward trend for emissions was maintained for all pollutants except SO emissions, which have grown by 16.4%, this also having been produced in previous years (e.g. 1999, 2003 and 2006). In 2013 the Transport sector's contribution to total emissions for the various pollutants remained around the 45% mark for NO<sub>x</sub>, and 5% for NMVOCs and SO<sub>x</sub>. NH<sub>3</sub>, for example, although showing increased emissions over recent years, is characterized by reduced contribution of just 0.8% in 2013.

In Spain, in general terms, transport contributes on average to close to 25% of total greenhouse gas emissions. These total emissions fell in 2013 by 7.7% (measured in CO<sub>2</sub>-eq). Road transport, which is the most in-demand for inter-city transport of passengers and freight, showed its first increase (0.7%) since 2008 in 2013.

According to the European Environment Agency Report "Monitoring of CO<sub>2</sub> emissions from passenger cars and light-industrial vehicles 2013". (EEA Technical report n° 19/2014), the trend in the number of private vehicles registered in the EU-27, has been falling continuously since 2007. Moreover, the number of registrations fell in 2013

compared to 2012 in approximately half of the Member States. In Spain this reduction was 54% up to 2013 and 44% up to 2014, given that between 2013 and 2014 the number of vehicles registered grew by 163,000.

Average CO<sub>2</sub> emissions for new private vehicles in the EU-27 in 2013 were 126.7g of CO<sub>2</sub>, less than the 132.2 g/km in 2012. In Spain, these values are slightly lower, with average missions at 128.7 g of CO<sub>2</sub>/km in 2012 and 122.4 g de CO<sub>2</sub>/km in 2013. Over the course of 2014 emissions fell further, with average values of 123.4g of CO<sub>2</sub>/km in the EU and 118.6 g of CO<sub>2</sub>/km in Spain (provisional data), which are below the objective of 130 g/km established for 2015.

In this sense, the regulation on contaminating emissions is even more strict. For the purposes of avoiding global warming, the European Union has established limits for CO<sub>2</sub> emissions for newly registered cars: 135 g CO<sub>2</sub>/km in 2014, 130 g CO<sub>2</sub>/km in 2015, 120 g CO<sub>2</sub>/km in 2016 and 95 g CO<sub>2</sub>/km in 2020.

Spain, along with France and Italy, is one of the countries with the lowest average CO<sub>2</sub> emissions. Between 2001 and 2014 average CO<sub>2</sub> emissions from private vehicles in Spain (grammes of CO<sub>2</sub>/km) have fallen by 24.4%.

#### Definition of the Indicator:

This indicator compiles total emissions for the following atmospheric pollutants caused by transport in Spain: SO<sub>2</sub> (sulphur dioxide), NO<sub>x</sub> (nitrogen oxides), CO (carbon monoxide), NMVOCs (Non-methane Volatile Organic Compounds), PM10 (particles with an aerodynamic diameter less than 10 µ) y PM2.5 (respirable particles with an aerodynamic diameter less than 2.5 µ). The information is presented in index form, where the value of the year 2000 = 100.

#### Methodological Notes:

- The most important pollutant gases produced by transport activities, be it for toxicity or damage to health or for environmental effects are grouped together: greenhouse gases (CO<sub>2</sub>, CH<sub>4</sub> y N<sub>2</sub>O), tropospheric ozone precursor gases (CO, NO<sub>x</sub>, NMVOCs y CH<sub>4</sub>) and acidifying and eutrophying gases (NO<sub>x</sub>, NH<sub>3</sub> y el SO<sub>2</sub>).
- Due to the changes in the system used for collecting information for the preparation of the "Inventory of Pollutant Gases in the Atmosphere" (modification of database), no definitive sectoral data were available for emissions from pollutant gases in the atmosphere ahead of publication of this document. For this reason, this indicator offers the evolution of individual gases for which official data is available.

#### Source:

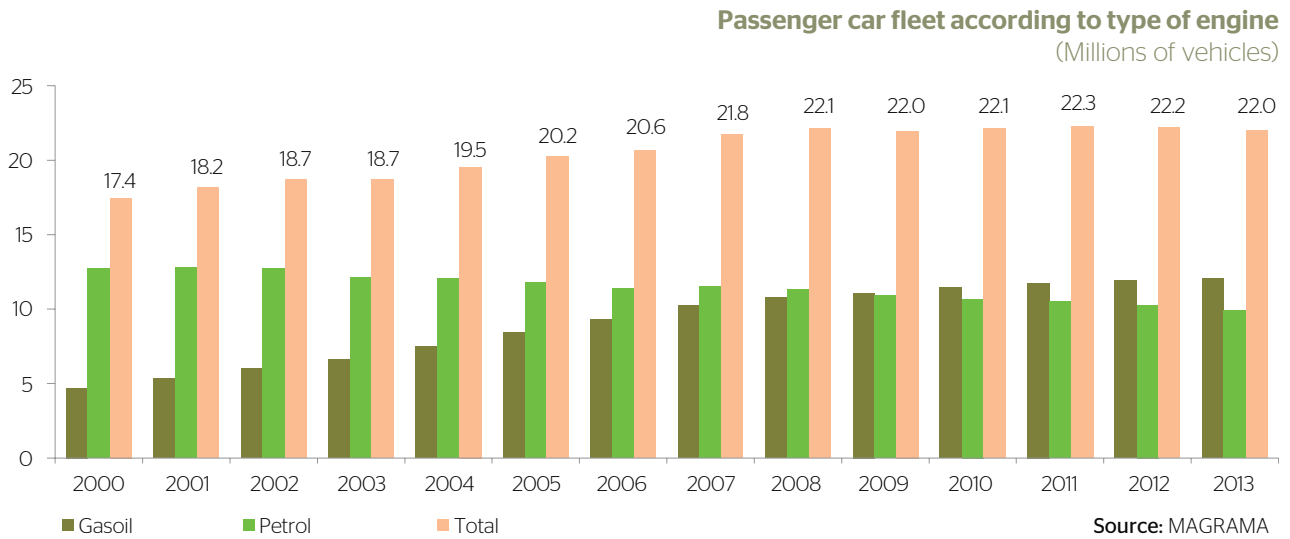
Ministry of Agriculture, Food and the Environment, 2015. Inventory to CLRTAP-EMEP Submission 2015-Resubmission-V3. Spanish third official submission (in 2015) of air emissions data foreseen under the CLRTAP convention for the time series 1900-2013. Sent 13 Mar 2015. Information available at EIONET Central Data Repository.

#### Recommended Websites:

- [http://cdreionet.europa.eu/es/un/UNECE\\_CLRTAP\\_ES/enwql6gq/](http://cdreionet.europa.eu/es/un/UNECE_CLRTAP_ES/enwql6gq/)
- <http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/sistema-espanol-de-inventario-sei/>
- <http://www.eea.europa.eu/publications/term-report-2014>
- <http://www.eea.europa.eu/publications/monitoring-co2-emissions-from-passenger>
- <http://www.eea.europa.eu/highlights/new-cars2019-co2-emissions-well>



## Passenger vehicle fleet by fuel type



In 2013, 55% of passenger vehicle fleet in Spain was motor diesel

Since 2009 the number of diesel vehicles has exceeded the number of petrol vehicles

The number of hybrid vehicles registered annually exceeds 10,000 since 2010

The structure of the passenger vehicle fleet in Spain maintains the change of use of fuel which has been experimented last of years. In the year 2000 just 27% of the country's private vehicles had diesel engines and used gasoil as fuel. In 2013, this percentage has almost doubled, making private vehicles that used gasoil 55% of the total cars in the country. The year 2009 represented the turning point and was the year in which the number of diesel vehicles exceeded that of petrol vehicles.

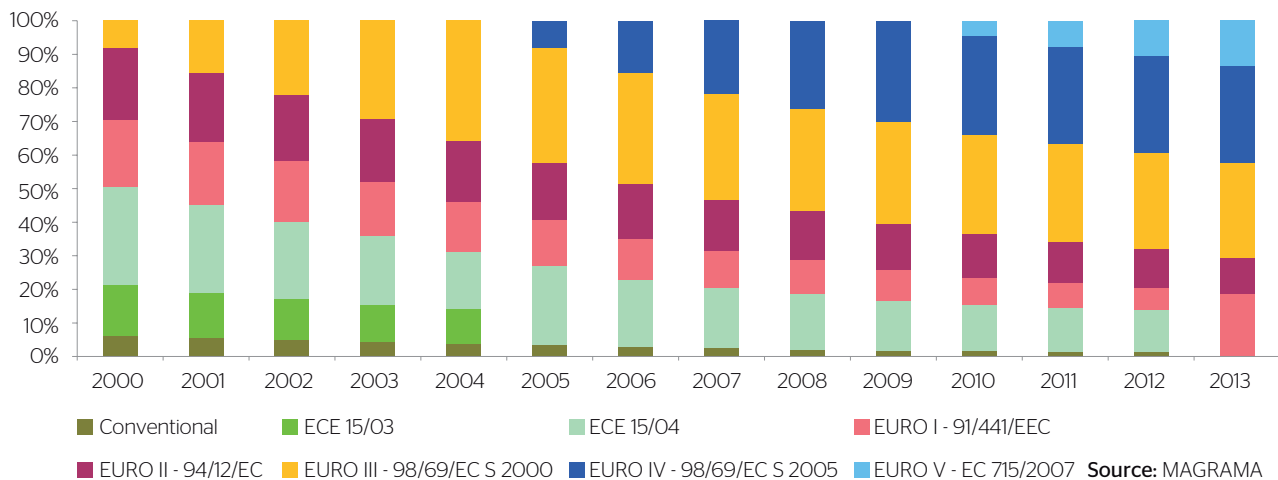
The penetration of diesel vehicles in the total vehicle population is even more significant when one considers that in the year 2008 growth of the total vehicle population was flat, with reductions in the years 2009, 2012 and 2013 (of 1% in this last year).

Between the years 2000 and 2013 total vehicle fleet with diesel cycle or gasoil engine grew by 156.5%, while the number for petrol engines fell by 22.2%, both within a broader context of growth of the total vehicle population by 26.0%. Referring to the period 2010-2013, years in which in Spain the economic situation provoked by the recession was in full swing, the number of private vehicles with diesel engines grew 5.2% while the number for petrol engines fell by 6.9% and the total by 0.6%. Just as a reference, between 2012 and 2013 the total population of vehicles using gasoil rose 1% and that of vehicles using petrol fell by 3.4, with the total falling 1%.

The importance assumed by diesel vehicles in Spain is motivated in part by less fuel consumption and by the lower price of fuel in comparison to petrol, despite, in general, greater purchase cost and maintenance.

The technological improvements of motors and vehicles, along with the quality and composition of the fuels, contributes to the reduction of emissions in the sector, along with the development of hybrid vehicles that offer lower than average fuel consumption. According to the National Association of Car and Lorry Manufacturers (ANFAC), the number of hybrid vehicles registered annually since 2010 exceeds 10,000 and that in 2013 that represented 1.5% of total vehicles registered.

### Passenger car fleet in accordance with European standards



European regulations set the acceptable limits for emissions of pollutants for new vehicles. Regulation (EC) No. 715/2007 of 20 June 2007, on type approval of motor vehicles with respect to emissions from private vehicles and light commercial vehicles (Euro 5 and Euro 6) and on access to vehicle repair and maintenance information. Since 2014, Regulation Euro 6 regulates the automobile industry.

The report "Transport and Infrastructure in Spain. 2013." of the Ministry of Public Works estimates that, in relation to use for automation, in 2013 consumption of petrol diminished by 5.4%, while gasoil consumption did by 1.9% and kerosene (exclusively for air transport) dropped 2.6% and fuel (exclusively) for maritime transport fell by 14.3%.

The number of hybrid vehicles registered annually exceeds 10,000 since 2010

#### Definition of the Indicator:

The indicator describes the number and proportion of passenger vehicles that make up the the passenger vehicle fleet based on the fuel type used by the engine (diesel cycle, gasoil or petrol).

#### Source:

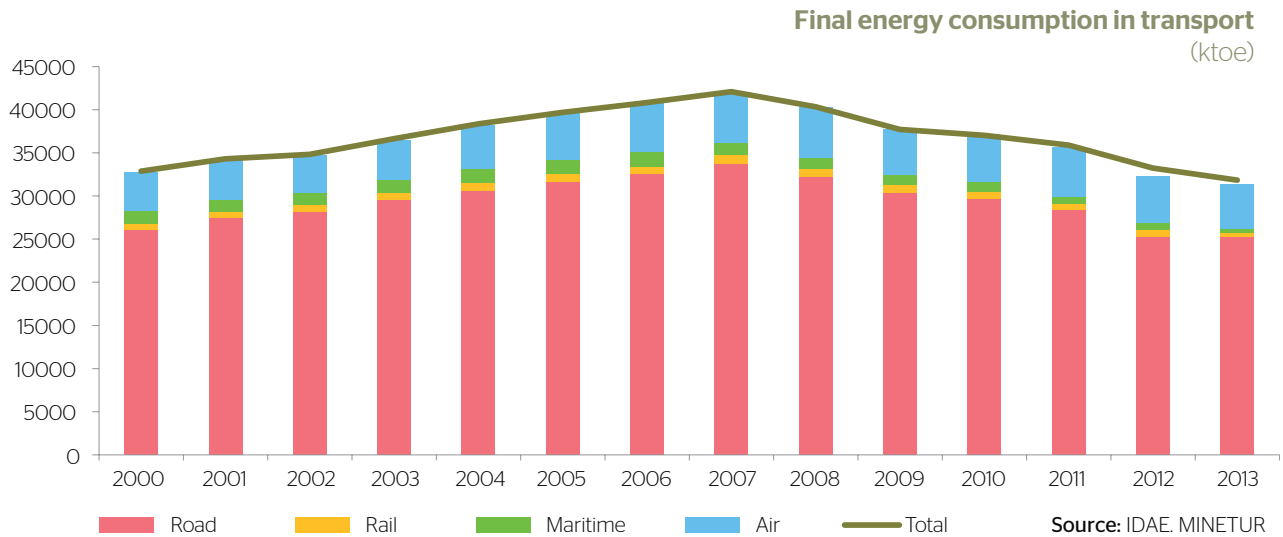
Ministry of Agriculture, Food and the Environment, 2015. Spanish Inventory of Greenhouse Gases. Years 1990-2013. Directorate-General for Environmental Quality and Assessment and Natural Environment.

#### Recommended Websites:

- <http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/sistema-espanol-de-inventario-sei/>
- <http://www.dgt.es/es/seguridad-vial/estadisticas-e-indicadores/parque-vehiculos/tablas-estadisticas/>
- <http://www.fomentogob.es/MFOMCPWeb/handlers/pdfhandler.ashx?idpub=BTW023>



## Final energy consumption in transport



Transport is currently the sector with the greatest final energy consumption, with almost 40% of the total

A drop in final energy consumption was recorded in recent years: 2008 was the first year in which there was such a reduction. In 2013, this reduction was 4.2% in respect of 2012

Road transport is the biggest consumer of final energy in the transport sector, followed by air. Both modes in 2013 were responsible for 95.5% of energy consumption

The transport sector was, in 2013, the primary consumer of final energy: 39.4% of the total. However, 2008 there was a reduction of demand in the sector, coinciding with the situation of economic crisis which had begun to manifest itself. In 2013, demand fell by 4.2%, a considerable decrease although not as sharp as that suffered in 2012, which was a 7.4% drop in respect of 2011. Among the causes were the contraction in motorised mobility and in traffic (mostly freight) associated with the economic situation.

Between 2007 (which saw the biggest consumption in recent years) and 2013, final energy consumption for transport fell by 24.4%.

In terms of modes of transport, this reduction was felt diversely. In maritime transport, energy consumption fell by 65.5% and in rail transport, 51.2%. Road transport decreased by 25.4% and air transport decreased by 12.4%. These latter two sectors accounted for the reduction. In 2013 they were responsible for 95.5% of final energy consumption in the sector. This distribution of consumption across modes of transport is relatively consistent over the years, albeit that air transport has increased in recent times. In the year 2000 the two sectors consumed 93.2%, a contribution just 2.3 percentage points less than in 2013.

With regard to the EU-28, in 2013 Spain consumed 9.2% of the total energy used for transport by all Member States. It was the fifth country in terms of consumption, behind Germany, the United Kingdom, France and Italy. It was also the country with the fifth greatest reduction in energy consumption in this sector for the period 2000-2013 with 3.8%. Between 2000 and 2013 just eight countries achieved a reduction, while for the EU-28 the average rose by 1%.

| Distribution of energy consumption by means of transport (%) |      |      |     |      |
|--|------|------|-----|------|
|  | Road | Rail | Sea | Air  |
| 2013   | 79.3 | 1.5  | 1.6 | 16.2 |
| 2000   | 79.5 | 2.2  | 4.2 | 13.7 |

Note: The contribution of "other forms of transport" is not included, which in 2000 represented 0.4% and in 2013 1.4%

Source: IDAE. MINETUR

#### Definition of the Indicator:

Final Energy Consumption in Transport. This data only includes energy consumption and excludes non-energy consumption. This final energy consumption is presented for the following modes of transport: road, rail, maritime, air and other non-specified modes. It includes energy from Carbon, petroleum products, gases, renewable energies and electricity.

#### Methodological Notes:

- The 1990-2013 historical series is presented for the annual balance of final energy consumption by sectors and energy sources. The first table shows the breakdown of the energy consumption and the second shows non-energy consumption which include the use of petroleum and natural gas for non-energy purposes, principally in the transport and industry sectors. The second table shows, in its last column, total final consumption, both energetic and non-energetic.
- Within each of the energy sources is included:
  - Carbon: Coal, Anthracite and Aggregates, Coke, Coke Oven and Blast Furnace Gases and Carbon Tars.
  - Petroleum Products: LPG, Petrol, Kerosene, Fuel Oil, Petroleum Coke
  - Gases: Natural Gas and other gases
  - Renewable Energies: Thermal Solar Energy, Geothermal, Biomass, Biogas, Biofuel gases

#### Source:

Institute for Energy Diversification and Conservation (IDAE). Information on the website: IDAE/Studies, reports and statistics / ENERGY BALANCES / Final Energy Balances (1990-2013)

#### Recommended Websites:

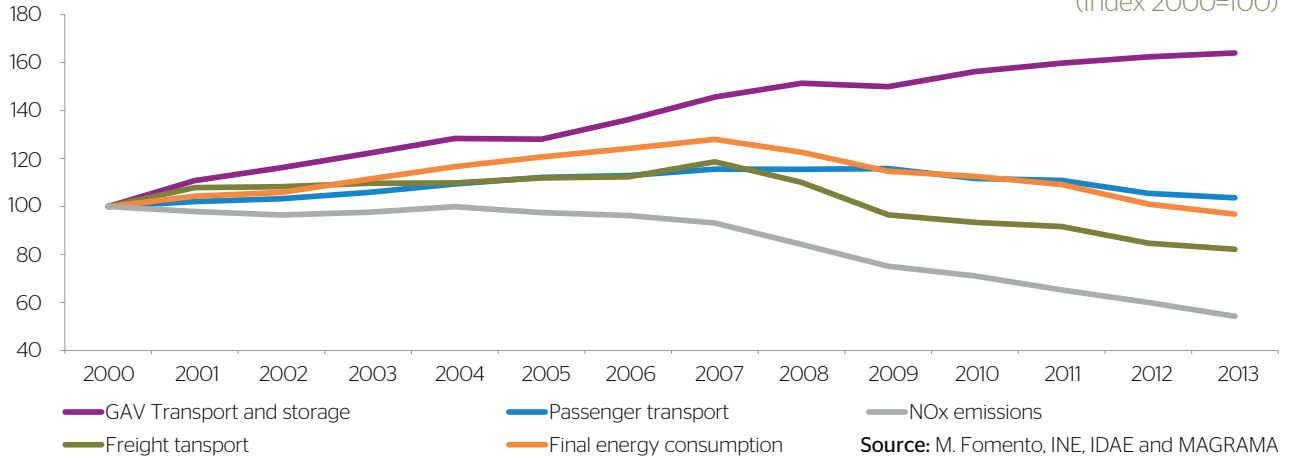
- <http://www.idae.es/index.php/idpag.802/relcategoria.1368/relmenu.363/mod.pags/mem.detalle>
- <http://www.idae.es/index.php/idpag.21/relcategoria.1029/relmenu.359/mod.pags/mem.detalle>



## Environmental efficiency of transport in terms of GVA, demand, emissions to the atmosphere and final energy consumption

Main transport variables: Passenger and freight transport, energy consumption, NO<sub>x</sub> and VAB emissions

(Index 2000=100)



Between 2000 and 2013, the GVA for Transport has increased 64% while the consumption of energy in the sector had been reduced by 3.2% and emissions of pollutants have also been reduced

The complexity of transport systems does not make its evaluation easy. An evaluation of the efficiency of the system can be made by comparing the disassociation or decoupling existing between a series of variables that describe, along with the economic development experienced by the sector in a specific period of time.

In the period 2000-2013, despite the slowdown in recent years (which includes the 2009 downturn), the GVA of the transport sector increased 64%. This growth has been produced while at the same time maintaining some variables and reducing many others representative of the sector. Thus, within the same period and economic framework:

- Domestic passenger traffic grew 3.7%, while freight fell by 17.9%.
- Final energy consumption fell by 3.2%.
- Emission of pollutants also fell significantly: 45.7% for NO<sub>x</sub>, 45.8% for PM10, 51.1% for PM2.5, 70.3% for SO<sub>x</sub>, 83.8% for CO and 88.7% for NMVOCs.

This scenario shows a certain efficiency coexisting with economic growth in the sector, a significant gain, with some relief from the pressure on resources, as this growth has been produced with less energy consumption and fewer emissions of pollutants into the atmosphere. A contributing factor was the reduction in demand for transport and freight and the stabilisation of passenger transport.

In these last few years the trend has been towards less activity, brought about by the recession in many sectors of the economy which brought with it a reduction in freight and passenger transport.

On the other hand, the improvements in efficiency associated with traffic management, fuel and private vehicles have been important factors contributing to this dynamic. Programmes to assist in the acquisition of new, more efficient and electric vehicles



have contributed to the renewal of the vehicle fleet, helping with the conservation of energy and the reduction in emissions of pollutants.

The intensity of the transport sector is one of the energy indicators calculated regularly by the IDAE. It is calculated by dividing the final energy consumption of the sector by the Gross Domestic Product. In the year 2000, this intensity was 0.04175 kep/€ while in 2013 the figure was 0.03357 kep/€, which represents a reduction of almost 20%. This is another example of the efficiency of the sector which shows us that every unit of economic growth is achieved with lower energy consumption by the transport sector.

In the same period the intensity of transport (final energy consumption/GDP) has fallen by almost 20%.

### Definition of the Indicator:

The indicator covers several selected transport variables for the purposes of comparing their evolution with that of the sectors Gross Value Added (GVA), and to thus evaluate if these trends come at the cost of a greater or lesser economic growth of the sector.

### Methodological Notes:

- See the previous indicator notes.
- Gross Value Added (GVA) refers to the activity of "Transport and Logistics" and includes land transport by pipeline, maritime and inland waterway transport, air transport, logistics and activities related to transports and mailing and courier services. It includes the contribution to the GVA of mailing and courier activities as disaggregated data for 2013 was not available.
- For the evaluation of the emissions of pollutants into the atmosphere, NO<sub>x</sub> emissions have been selected, as one of the pollutants for which pollutants have been reduced least in the transport sector for the period in question. As described in detail in the calculated indicator, SO<sub>x</sub> and NMVOC emissions have diminished by in the region of 90% for the period.

### Sources:

- **GVA:** INE, 2015. Spanish National Accounting. INEbase / Economy / Economic Accounts / Spanish National Accounting. Base 2010 / Final detailed results 1995-2013.
- **Passenger and freight transport:** Ministry of Public Works, 2014. "Transport and Infrastructure. Annual Report 2013." Many years.
- **Emissions of pollutants:** Ministry of Agriculture, Food and the Environment, 2015. Inventory to CLRTAP-EMEP Submission 2015-Resubmission-V3. Spanish third official submission (in 2015) of air emissions data foreseen under the CLRTAP convention for the time series 1900-2013. Sent 13 Mar 2015. Information available at EIONET Central Data Repository.
- **Final energy consumption:** Institute for Energy Diversification and Conservation (IDAE). Information on the website: IDAE/ Studies, reports and statistics / ENERGY BALANCES / Final Energy Balances (1990-2013)

### Recommended Websites:

- [http://www.fomentogob.es/MFOM/LANG\\_CASTELLANO/ATENCION\\_CIUADANO/INFORMACION\\_ESTADISTICA/](http://www.fomentogob.es/MFOM/LANG_CASTELLANO/ATENCION_CIUADANO/INFORMACION_ESTADISTICA/)
- <http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/sistema-espanol-de-inventario-sei/>
- <http://www.idae.es/index.php/idpag.802/recategoria.1368/remenu.363/mod.pags/mem.detalle>
- <http://www.idae.es/index.php/idpag.21/recategoria.1029/remenu.359/mod.pags/mem.detalle>
- <http://www.eea.europa.eu/publications/term-report-2014>



## URBAN ENVIRONMENT AND HOUSEHOLDS 2.17

Urban areas, where environmental, economic and social aspects are evidently interrelated, play an essential role in meeting the objectives of the European Union's strategy for sustainable development. There, problems such as air quality, disproportionate urban sprawl, generation of waste and wastewater make establishing objectives and obligations that provide solutions for these and other environmental problems a very important issue on the political and social agenda, thinking, above all, on the health and quality of life of citizens. Urban transport, for example, so fundamental for the citizen and for economic activity, has direct consequences on atmospheric and acoustic pollution, congestion and CO<sub>2</sub> emissions.

Therefore, for the improvement of the quality of life, and even for compliance with the legal requirements established in Community, national and international standards relating to the protection of health and the environment, some local and regional authorities have set up voluntary initiatives.

One such initiative is the Covenant of Mayors, a European movement through which cities of different sizes have made a voluntary commitment to improve energy efficiency and use renewable energy sources in their territories. In joining, signatories of the Covenant commit to implementing in their territory a Sustainable Energy Action Plan (SEAP), in order to achieve the European Union objective of reducing CO<sub>2</sub> emissions by 20% before 2020. At present the agreement has 6,326 signatory cities, who have presented 4,626 SEAPs and represent 203,699,259 inhabitants throughout the world, 89.7% of them cities with less than 50,000 inhabitants. Spain has a total of 1,436 signatory cities, of which 81%, 1,162 cities, representing 26,367,788 inhabitants, have presented their own SEAP plan.

Another example of an urban initiative, this one related to urban transport, is European Mobility Week (EMW), an awareness campaign addressed to the politicians responsible and the citizens, on the negative consequences of the irrational use of the car in the city, both for public health and for the environment, and the benefits of more sustainable forms of transport such as public transport, cycling or walking. It was launched in Spain in 1999 and runs from 16 to 22 September, with the last day

seeing the event “The City, Without my Car!” taking place on the last day, which intends to find solutions to problems associated with increasing traffic in cities. For 2014 the slogan for EMW was “A street is your best choice”, centred on the reassigning and redesign of public spaces in favour of pedestrians and cyclists.

### Urban pressure on land

- The population of Spain in the year 2014 was 46,771,341 inhabitants, with a density of 92.4 inhabitants per km<sup>2</sup>.
- According to the review of the Municipal Register as of January 2014, the urban density fell in respect of the previous year in all Autonomous Communities except for the cities of Ceuta and Melilla
- Over the last fifteen years, 2000-2014, urban density in Spain has risen by 20.2%.

### Urban public transport

- The General State Administration invests approximately 650 million Euros annually in urban public transport and metropolitan rail
- In 2014 a total of 2.73 billion passengers used public transport in Spain.
- During the 2000-2014 period, metropolitan rail transport increased by 20.92%, while urban bus travel fell by 5.12%.

### Final energy consumption per household

- Final energy consumption per household in Spain fell in 2013 by 4.18% in respect of the previous year, 8.88% below the levels recorded in the year 2000.
- During the 2000-2013 period, electrical consumption per home grew by 18.98%, while thermal consumption per household fell by 23.85%.
- In the EU-28, Belgium was the country that most increased final energy consumption per household with 7.18%, while Greece was the country that suffered the biggest decrease in this respect with 25.51%.

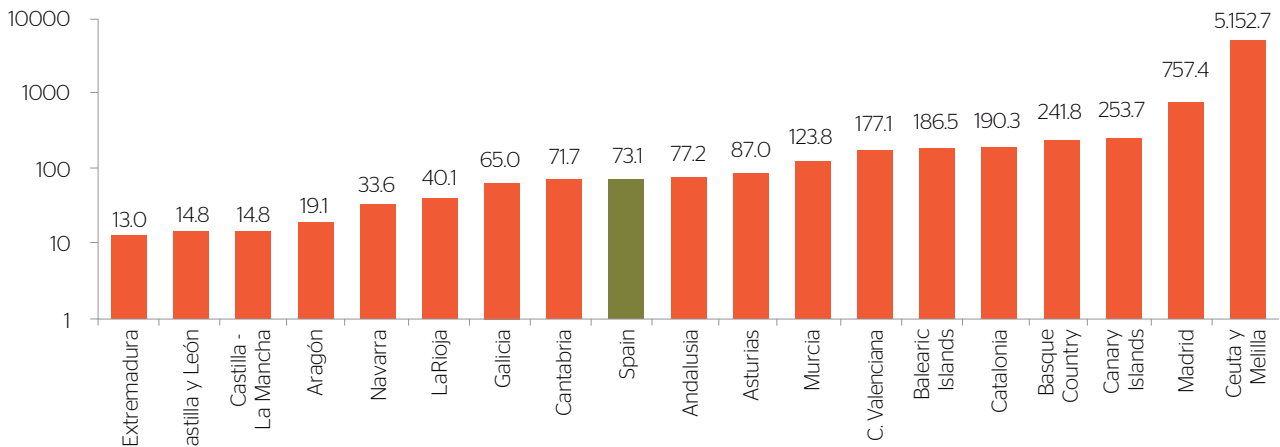
### Household expenditure

- In the year 2013, Spanish households spent a total of 493.51 billion Euros, 3.07% less than in the year 2012.
- In terms of average expenditure per household, between the years 2006 and 2013 each household spent 3,117 Euros less, a figure that rises to 4,600 Euros if we compare expenditure in 2013 with that registered in 2008, the historical peak in the series.
- The Basque Country (13,573 Euros) and Madrid (12,850 Euros) are the Autonomous Communities that spent the most per capita in 2013, at 27 and 20 points, respectively, above the country average.



## Urban pressure on land

Urban pressure in Spain, 2014  
(population per km<sup>2</sup>)



Source: repared by authors using INE data

The Spanish population in the year 2014 was 46,771,341 inhabitants, with a density of 92.4 inhabitants per km<sup>2</sup>

According to the review of the Municipal Register as of January 2014, urban density has fallen in respect of the previous year in all Autonomous Communities except for Ceuta and Melilla

Looking at the Municipal Register, reviewed annually, on the 1 January 2014 the total population of Spain reached 46,771,341 inhabitants, some 0.76% less than in the previous year, of which 37,002,316 live in urban areas, understood as centres with a population of more than 10,000 inhabitants. This number of inhabitants concentrated in urban areas has decreased by 0.84% in respect of 2013, although if we compare them with the figures for the year 2000 we can observe an increase of 20.15%.

Bearing in mind the surface area of Spain is 505,968.36 km<sup>2</sup>, the population density of our country (relationship between total number of inhabitants and the surface area), comes in at 92.4 inhabitants per km<sup>2</sup>, a figure which drops to 73.1 inhabitants/km<sup>2</sup> if we calculate the density of urban space or urban density, the result of the relationship between urban areas of more than 10,000 inhabitants and the surface area. This last quotient has varied in recent years, from 73.7 inhabitants/km<sup>2</sup> in 2011, reaching 73.9 inhabitants/km<sup>2</sup> in the year 2012 and 73.7 inhabitants/km<sup>2</sup> in the year 2013.

In terms of Autonomous Communities, Andalusia is the most populated with 8,042,305 inhabitants, followed by Catalonia with 7,518,903 and Madrid with 6,454,440 inhabitants. The Autonomous Cities of Ceuta and Melilla 5,152.7 hab/km<sup>2</sup> have the highest levels of urban density, followed by Madrid with 757.4 hab/km<sup>2</sup>. Among the rest of the Autonomous Communities, we must highlight the Canary Islands with 253.7 per km<sup>2</sup> and the Basque Country with 241.8 per km<sup>2</sup>.

In terms of annual change, between the years 2013 and 2014 only Ceuta and Melilla were the territories in Spain that increased in urban population density, 0.96% more than in 2013, with the rest showing a decrease in logical correlation with the decrease in population.

The Autonomous Communities that saw the biggest reductions in urban population density were: Aragón, with density 2.8% lower and 1.61% drop in population; Comunidad Valenciana, with 2.6% reduction in urban density and 2.13% drop in population and the Balearic Islands, with 1.75% drop in density and 0.74% drop in population.

If we take into account the last fifteen years, 2000-2014, we can see that urban population density in Spain has risen by 20.2%. Within this general increase, the Autonomous Communities of Ceuta and Melilla stand out with an increase of 125.2%, Castilla La Mancha with 42.2%, the Balearic Islands with 40.1% and Murcia with 32.0%.

In the EU-28 Spain was the fifth most populated country, however, it is the country with the eleventh lowest population density. Malta with 1,346.2 per km<sup>2</sup>, the Netherlands with 411.2 per km<sup>2</sup>, Belgium with 367 per km<sup>2</sup> and the United Kingdom with 257.9 per km<sup>2</sup> are the countries with the highest population density; while at the other extreme, Finland with 16.1 per km<sup>2</sup>, Sweden with 22 per km<sup>2</sup>, Estonia with 29.1 per km<sup>2</sup> and Latvia with 31 per km<sup>2</sup> complete the list of those with the lowest population density for the year 2014.

Over the last 15 years, 2000-2014, urban density in Spain has risen by 20.2%

#### Definition of the Indicator:

This indicator represents population density data, both total density for Spain measured in inhabitants per km<sup>2</sup> and the existing density in municipalities with a population greater than 10,000.

#### Methodological Notes:

- “Urban density” is the term that defines the ratio between the population living in municipalities with over 10,000 inhabitants and the surface area of a particular territory. In the case of Spain, this ratio is calculated for the entire country and by Autonomous Communities. It is an expression of density (population per km<sup>2</sup>) that allows to evaluate the level of concentration of population in the urban environment. For the calculation of this indicator, the figures supplied by the Municipal Register of Inhabitants as of 1 January of years 2000 to 2014 have been used.
- For the calculation of this indicator, the urban environment includes “all areas with a population of 10,001 or more inhabitants”. Although it is quite common to use this population size threshold to separate “urban” from “non-urban” environments, it seems that this classification usually masks certain situations that are not entirely urban (according to the methodology applied for the definition of Spanish Urban Areas of the Statistical Atlas of Urban Areas of the Ministry of Public Works).

#### Sources:

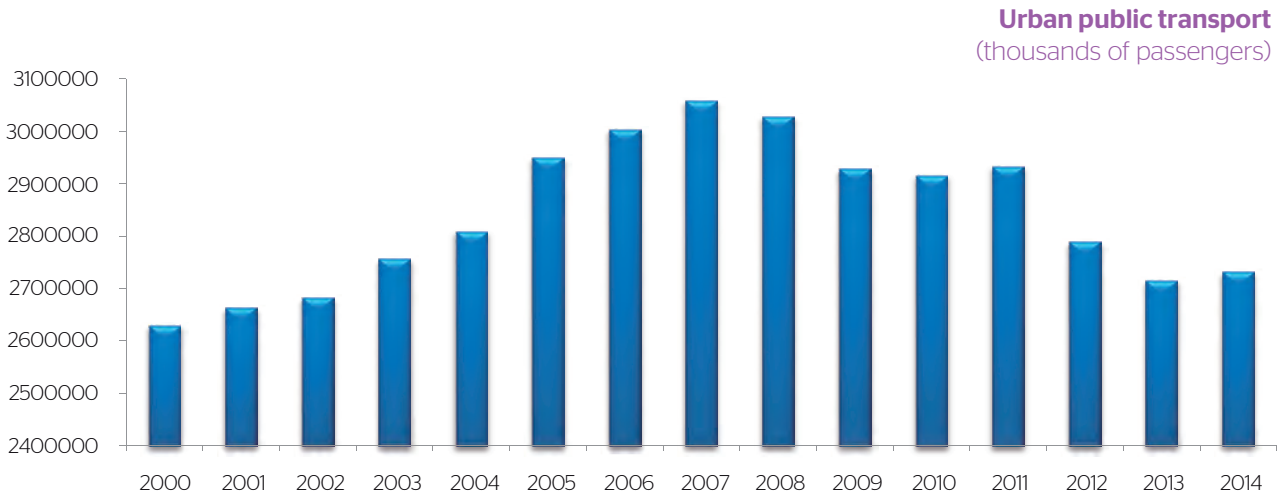
- INE. Information on the website: INEbase / Demography and Population / Register. Population by municipalities / Population of municipalities and population / Official population figures for Spanish municipalities, review of municipal Register / Population at 1 January 2014

#### Recommended Websites:

- [http://www.fomentogobes/MFOM/LANG\\_CASTELLANO/\\_ESPECIALES/SIU/](http://www.fomentogobes/MFOM/LANG_CASTELLANO/_ESPECIALES/SIU/)
- [http://www.ine.es/inebmenu/mnu\\_padron.htm](http://www.ine.es/inebmenu/mnu_padron.htm)



## Urban public transport



Source: INE

The General State Administration annually invests around 650 million Euros in urban public transport and metropolitan rail

In the period 2000-2014 metropolitan rail transport grew by 20.92% while urban bus travel fell by 5.12%

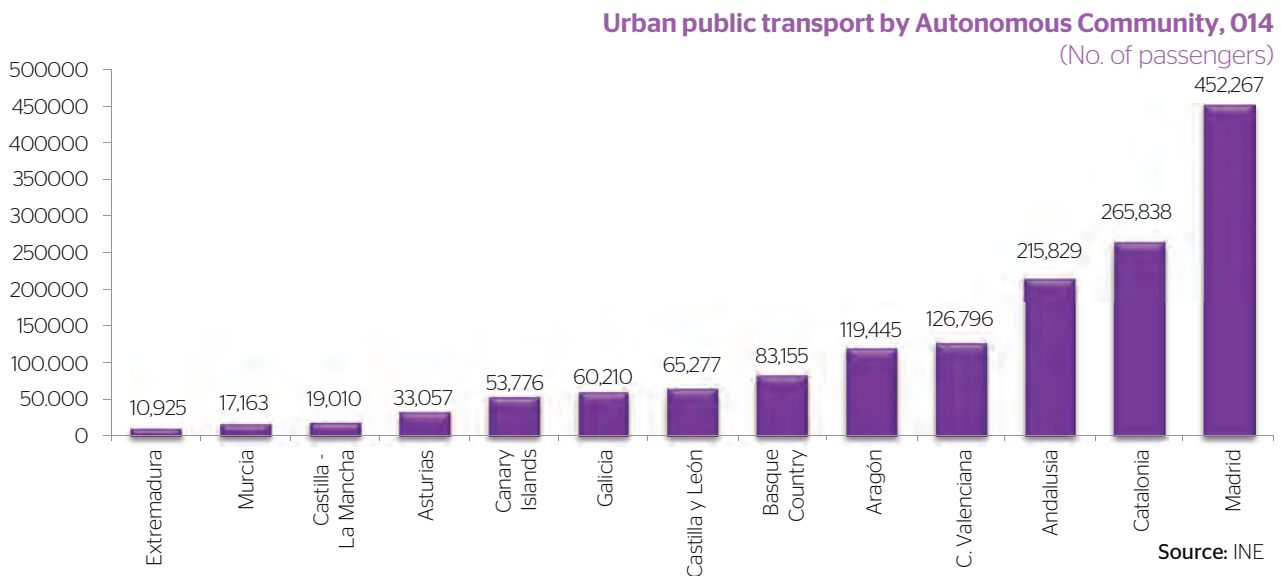
In 2014 a total of 2.73 billion passengers used public transport in Spain

According to the data from the Ministry of Public Works, the General State Administration, without having specific competency in the area, invests around 650 million Euros in urban public transport. Urban transport, fundamental for citizens and for economic activity, has direct consequences for atmospheric and acoustic pollution, congestion and CO<sub>2</sub> emissions, and indirect consequences for the equality of life of citizens, as it consumes three times less energy and produces three times less greenhouse gas emissions than the private vehicle.

Analysing national figures corresponding to the use of urban public passenger transport, understood as urban buses and metropolitan rail, a total increase of 3.88% is observed between the years 2000 and 2014, although there have been significant falls in the number of passengers in the years 2009 (-3.31%) and 2012 (-4.91%). Looking at it separately, metropolitan rail transport has grown by 20.92% in the same period, as opposed to a reduction of 5.12% in the number of users of urban buses; the number of passengers reached its peak in the years 2008 (1,218,009,000) and 2007 (1,850,195,000) respectively, only to then culminate in 2014 with a 9.71% reduction in metropolitan rail transport on the 2008 figure, and a 11.80% reduction in the case of urban buses in respect of 2007.

Between 2013-2014 the number of users has grown, both in terms of the total for urban transport and individually for metro and for urban buses. So, in 2014 a total of 2.73 billion passengers used urban public transport in Spain, some 0.59% more than in the previous year; metro and bus, accumulated that same year totals of 1.09 billion and 1.63 billion users respectively, up 0.89% and 0.38% on 2013.

In 2014, Madrid was the Autonomous Community with the highest number of passengers, with a total of 452,267,000, 0.94% less than in 2013, followed by Catalonia with 265.838,000 users, 1.32% less than in the previous year. Next was Andalusia with 215,829,000 passengers, up 0.60% on 2013. At the opposite end, Extremadura is the



Autonomous Community with lowest number of passengers, with a total of 10,925,000, a 2.05% drop year on year, followed by Murcia with 17,163,000 passengers, an increase of 3.05% on 2013. These are also the two with the largest decrease and increase respectively for 2014. The Basque Country and Comunidad Valenciana also registered significant increases in terms of annual variation for 2013-2014 with 2.90% and 2.26% respectively.

#### Definition of the Indicator:

This indicator shows data regarding urban passenger transport only, which is understood as that running on urban or built-up land, or connecting different urban nuclei within the same municipality. It does not include inter-city transport or special or unscheduled transport

#### Methodological Notes:

- Metropolitan area is defined as the “urban geographic area with a high degree of interaction among its multiple urban centres in terms of journeys, day-to-day relationships, economic activity, etc.”. There is no single definition to identify the metropolitan areas of Spain. According to the Metropolitan Mobility Observatory of Spain (OMM) metropolitan areas match the geographic scope of action of each Public Transport Authority (ATP).
- For the purposes of maintaining statistical confidentiality, data is not published for the Autonomous Communities of the Balearic Islands, Cantabria, Navarra and La Rioja and the Autonomous Cities of Ceuta and Melilla.

#### Source:

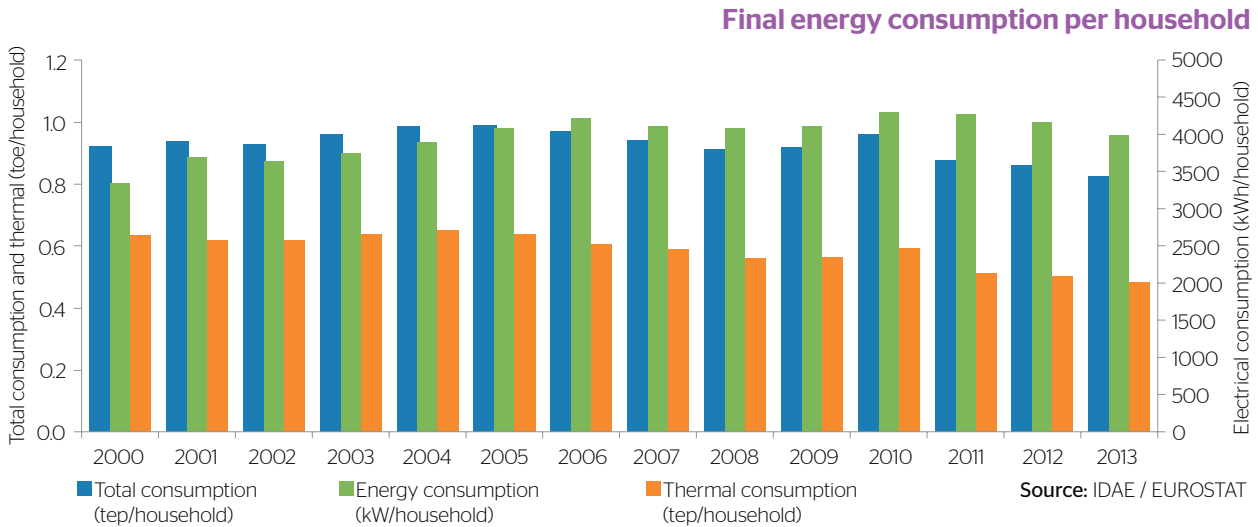
INE. Information on the website: INEbase / Services / Transport and Related Activities, Communications / Passenger Transport Statistics / Monthly Series / Urban Transport

#### Recommended Websites:

- [http://www.ine.es/inebmenu/mnu\\_transporte.htm](http://www.ine.es/inebmenu/mnu_transporte.htm)
- <http://www.observatoriomovilidad.es/>
- <http://www.transytupm.es/>



## Final energy consumption per household



Final energy consumption per household in Spain fell by 4.18% in 2013 in respect of the previous year, 8.88% below the value registered in the year 2000

According to data from the Institute for the Diversification and Saving of Energy (IDAE), final energy consumption per household in Spain fell by 4.18% year on year in 2013, registering a rate of 0.82 toe/h against 0.86% toe/h for the year 2012, which means that this variable has remained below 2000 levels, when 0.92 toe/h was registered, 8.88% more than in 2013. In terms of the evolution of this variable over the period 2000-2013, it is noted a continuous decrease from 2006 on, except for a modest increase in 2010, which translates into a 16.32% decrease over the period.

In terms of the breakdown by use, electricity accounted for the greatest reduction in 2013, down 4.29% on the previous year, registering consumption of 3,980 kWh/h, situating it close to 2004 levels. Despite this decrease, for the period 2000-2013, unitary electricity consumption increased by 18.98%, peaking in 2010 at 4,293 kWh/h. With regard to unitary thermal consumption, between 2012 and 2013, this fell by 4.09%, from 0.5% to 0.48% toe/h, which was the smallest decrease on record. However, over the period 2000-2013, it is the form of household energy consumption that has decreased the most: 23.87%, falling from 0.63 toe/h to 0.48 toe/h.

During the 2000-2013 period, electricas consumption per home grew by 18.98%, while thermal consumption per household fell 23.85%

When we compare these figures for household consumption with total residential consumption, including second homes and, where relevant, common spaces, we see that over the 2000-2013 period, both variables have behaved similarly, with a practically continuous increase in consumption up to the year 2010, when there was a considerable reduction. Thus, consumption in the residential sector in the year 2013 was 15,015,000 toe/h, 3.3% less than in the previous year and 11.27% below the figure recorded in 2010, although there was an increase of 25.08% in the year 2000 (12,004,000 toe/h).



In terms of the EU, in 2013, despite considerably reducing its levels of final energy consumption in the residential sector, Spain was the country with the sixth highest final energy consumption registered, although below Poland at 20,407 ktoe, Italy with 34,204 ktoe, the United Kingdom with 40,208 ktoe, France with 43,679 ktoe and Germany with 59,699 ktoe. In terms of annual change for 2012-2013, Cyprus and Greece saw the biggest reductions with 12.47% and 25.51% respectively, while Germany and Belgium registered the biggest increase, reaching 596,979 (5.42%) and 89,778 (7.18%) ktoe respectively.

In the EU-28, Belgium was the country with the biggest increase in final energy consumption in residential sector with 7.18%, while Greece saw the biggest decrease, with 25.51%

#### Definition of the Indicator:

This indicator shows final energy consumption of the residential sector as a whole, as well as, specifically, per household.

#### Methodological Notes:

- The difference between energy consumption of the residential sector and household energy consumption is that the former includes energy consumption for second homes and the common areas of residential buildings and residential communities, while the later is for principal residences only.
- The data for the residential sector only includes energy use.
- Data on energy consumption include final consumption of renewable energies for thermal end uses (biomass and solar thermal energy).

#### Sources:

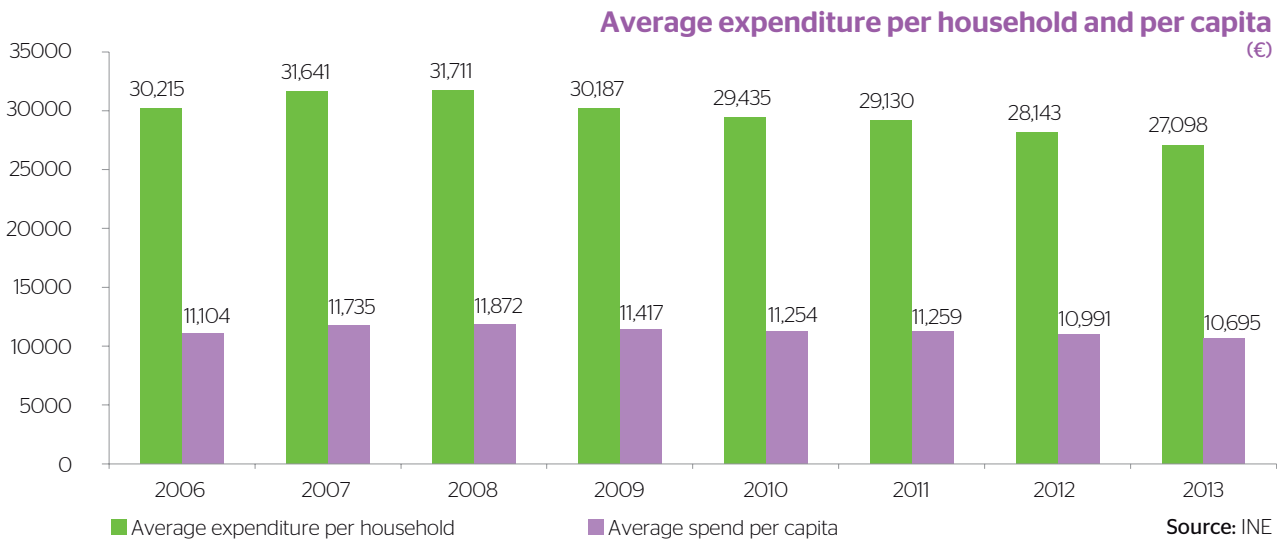
- [IDAE / Home / Energy Saving and Efficiency / Studies, Reports and Statistics / Energy Intensity \(2013\)](#)
- [IDAE / Home / Energy Saving and Efficiency / Studies, Reports and Statistics / Energy Intensity \(1990-2013\)](#)

#### Recommended Websites:

- <http://www.idae.es/index.php/idpag.802/reicategoria.1368/reimenu.363/mod.pags/mem.detalle>
- <http://www.minetur.gob.es/energia/es-ES/Paginas/index.aspx>
- [http://eppeurostatec.europa.eu/portal/page/portal/statistics/search\\_database](http://eppeurostatec.europa.eu/portal/page/portal/statistics/search_database)



## Household expenditure



In the year 2013 Spanish households spent a total of 493.13 billion Euros, 3.07% less than in 2012

In terms of average expenditure per household, between the years 2006 and 2013, each household spent 3,117 Euros less, a figure that rises to 4,600 Euros if we compare the 2013 expenditure with the 2008 peak

In accordance with the data from the Family Budget Survey, which since 2006 has been carried out by the National Statistics Institute (INE), in 2013, Spanish households spent a total 493.51 billion Euros, 3.07% less than the previous year. If we take the period 2006-2013 into account, total spent increased by 10.71% over the first two years, reaching the historical peak in the series in 2008 with 541.23 billion Euros, after which point Spanish homes adapted their expenditure with the economic crisis and, but for a modest rise in 2011, the level of total spend has been falling significantly to the extent that, compensated by the increase in the years previous, in 2013 total spend has grown only 0.95% since the year 2006.

In terms of average spend per household, over the eight years from 2006-2013, more or less the same trend as with total spend can be observed: five consecutive years of negative growth from the onset of the economic crisis, from 30,215 Euros in 2006 to 27,098 Euros at the end of 2013, a drop of 10.31% which translated into 3,117 Euros less of average spend per household, in comparison with a peak of 31,711 Euros recorded in 2008. The 2013 figures show a drop of 4,600 Euros per family in respect of the 2008 peak.

Looking at the 2012-2013 annual variation, average spend per household in 2013 fell by 3.71% in respect of the previous year, a 1,045 Euro drop on 2012. The twelve groups of products and services measured by the INE suffered reductions, except in the case of education, which grew by 8.6% (representing an increase of 29 Euros), due to the increase in fees for all levels of studies. Among those that experienced a fall off we can highlight hotels, cafés and restaurants, with a drop of 8.5%, entertainment, events and culture (-8.5%) and alcoholic beverages and tobacco (-7.8%), based on this data, we can observe that Spanish citizens continue to slash their budget for what can be considered superfluous expenditure, while those considered structural maintain their weight in family expenditure.

Statistics from the INE reveal that the average expenditure per person in 2013 was 10,695 Euros, 2.7% less than in 2012, which translates into 296 Euros less per person. Once again the historical peak in the 2006-2013 series was reached in the year 2008 with 11,872 Euros, up 6.91% on 2006 and 11% more than the 2013 figure.

As for Autonomous Communities, those with the highest household expenditure in the year 2013 were Catalonia with 86,316,405,360 Euros, followed by Madrid with 81,231,521,190 Euros and Andalusia with 76,163,118,690 Euros. In respect of average expenditure per household, the Basque Country with 32,719.93 Euros heads the list of Autonomous Communities that spend the most, followed by Madrid with 32,550.48 Euros and Navarra with 30,677.17 Euros. Finally, once again the Basque Country (13,573 Euros) and Madrid (12,850) are the Autonomous Communities with the highest expenditure per capita, some 27 and 20 points above the national average. At the other end of the spectrum are the Canary Islands with 8,465 Euros and Extremadura with 8,941 Euros, 20.8 and 16.4 points below the national average.

The Basque Country (13,573) and Madrid (12,850) were the Autonomous Communities with the highest spend per capita in 2013, at 27 and 20 points above the country average respectively

#### Definition of the Indicator:

This indicator represents final expenditure for households, defined as those expenses incurred by households for goods and services used to directly satisfy the needs and requirements of members of the household.

#### Methodological Notes:

- The private household is defined as the person or set of persons that jointly occupy a principal family home or part of it and consume and/or share food or other goods and services from the same budget.
- This variable gives us information on the following:
  - Total spend: expenditure of the totality of all Spanish homes;
  - Average spend per household: obtained as a quotient of the total expenditure estimate of the number of households;
  - Average spend per capita: obtained as a quotient of the total expenditure estimate of the number of persons in households.
- The classification used by the INE to compile expenditure is the COICOP, the national adaptation of the international classification used by Eurostat for budget surveys (COICOP/HBS) and which is divided into the following twelve categories. 1. Food and non-alcoholic beverages; 2. Alcoholic beverages, tobacco and narcotics; 3. Clothing and footwear; 4. Housing, water, electricity, gas and other fuels; 5. Furniture, household equipment and the costs of maintaining a residence; 6. Health, 7. Transport; 8. Communication; 9. Entertainment, events and culture; 10. Education; 11. Hotels, cafés and restaurants, and 12. Other goods and services.

#### Source:

National Institute of Statistics (INE): Survey on Family Budgets INEbase / Standard and life condition (IPC) / Living conditions / Household Budget Survey. Base 2006 / Results

#### Recommended Websites:

- <http://www.ine.es/prensa/np848.pdf>
- [http://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica\\_P&cid=1254735976608](http://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica_P&cid=1254735976608)



# NATURAL AND TECHNO-LOGICAL DISASTERS 2010

Nature is constantly undergoing change and transformation processes which can manifest themselves in different ways, through phenomena occurring regularly such as rainfall and other extraordinary and sudden phenomena such as, for example, droughts or floods. When these phenomena take place suddenly and intensely, they may cause great damage and generate extensive material and human loss.

| No. of disasters and fatalities due to natural disasters worldwide |       |        |                     |                     |
|--|-------|--------|---------------------|---------------------|
|  | 2014  | 2013   | Average (2004-2013) | Average (1984-2013) |
| Events   | 980   | 920    | 830                 | 640                 |
| Fatalities   | 7,700 | 21,000 | 97,000              | 56,000              |

**Source:** Munich Reinsurance Company (several years): "2014 Natural Catastrophe Year in Review".  
On the website: [www.munichre.com](http://www.munichre.com).

According to data provided by the Munich Re Foundation, in 2014 there were 980 natural disasters in the world, which is a much higher figure than the average of the preceding decade (2004-2013) which amounted to 830 natural disasters, or the annual average of the previous 30 years (1984-2013), which was 640. However, and according to the same source, in 2014, the number of fatalities amounted to 7,700, a number far smaller than the annual average of the last decade (21,000 fatalities) or that of the last thirty years, a period during which an annual average of 56,000 was recorded.

92% of the natural disasters registered in 2014 were due to climatic factors. Regarding these events, 42% caused floods, 41% were caused by extreme weather factors such as storms, and 9% were due to climatic phenomena such as heat waves, droughts and fires. Just 8% of the disasters registered were due to geological factors such as earthquakes, tsunamis and volcanic eruptions.

Once again, in 2014, Asia was the continent which registered the highest number of fatalities (37%) caused by North America (20%) and Europe (16%). Africa, South America and Australia registered in 2014, 10%, 9% and 8% of fatalities respectively.

In Spain there were several natural phenomena and industrial accidents that had major social and environmental consequences, although they cannot be compared to the disasters that occurred in other areas of the planet.

During 2014, there were no maritime accidents which caused hydrocarbon spills from oil tankers (that is why the environmental indicator referring to maritime accidents has not been updated), although there has been operational discharges from tankers

and facilities, most of which took place in port waters. Likewise, there has been small episodes of pollution from sunken ships. Two pollution emergences occurring in 2014 must be mentioned: one of the in Gran Canaria in July which affected the marine reserve of El Cabrón and the other one in December, in the port of Ceuta, caused by an oil leak from the pile of a facility. The Maritime Safety Agency completed a follow-up of both pollution episodes, which lasted several days.

### Fatalities due to natural disasters

- In 2014, there were 29 fatalities due to natural disasters, three less than in the previous year
- Fatalities on land due to sea storms was the phenomenon with the highest number of victims registered in 2014, with 18 deaths
- The fatalities of 2014 caused by floods occurred in the Canary Islands and one in Catalonia

### Drought periods

- 2014 was slightly wetter than usual in most of Spain
- Average rainfall reached 696 mm; therefore 2014 was classified as a wet year

### Forest fires

- The forest area affected by forest fires decreased by 24.6% in 2014 compared to the previous year
- In 2014 in Spain, 46,555 ha of forest area was affected by fires, of which 11,279 ha was tree covered
- In 2014, 7 major fires were registered, as compared to 28 major fires which was the average for the preceding ten-year period

### Road and rail accidents causing environmental damage

- In 2013, 28 accidents causing possible environmental damage were registered
- In 2013, 28 environmental impacts were recorded, 23 of which caused soil pollution, 4 generated air pollution and 2 affected water bodies

### Industrial accidents involving hazardous substances

- In 2014, only one accident occurred within the scope of the SEVESO Directive in Murcia.
- In the last decade in Spain, a total of 23 accidents falling within the scope of the SEVESO Directive were registered, with an annual maximum of 7 accidents in 2010.

### Extraordinary risks: indemnities resulting from floods and storms

- In 2013, the Insurance Compensation Consortium processed 18,650 files corresponding to floods and 20,137 corresponding to storms.
- These costs reached 122,714 and 34,035 Euros respectively.



## Fatalities due to natural disasters

| Number of fatalities in Spain due to natural disasters. 1995-2014 |            |           |           |           |           |           |           |           |           |           |           |              |
|---|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------------|
| Natural Disaster  | 1995-2004  | 2005      | 2006      | 2007      | 2008      | 2009      | 2010      | 2011      | 2012      | 2013      | 2014      | Total        |
| Floods  | 229        | 8         | 9         | 11        | 6         | 5         | 12        | 9         | 15        | 5         | 2         | 311          |
| Storms  | 139        | 8         | 9         | 4         | 3         | 11        | 6         | 2         | 1         | 7         | 5         | 195          |
| Forest fires  | 53         | 19        | 8         | 1         | 1         | 11        | 9         | 12        | 10        | 1         | 4         | 129          |
| Landslides  | 21         | 0         | 5         | 2         | 1         | 2         | 2         | 3         | 0         | 2         | 0         | 38           |
| Heat waves  | 86         | 9         | 23        | 9         | 3         | 6         | 16        | 6         | 6         | 4         | 0         | 168          |
| Snow avalanches   | 27         | 1         | 0         | 0         | 4         | 3         | 11        | 2         | 0         | 4         | 0         | 52           |
| Episodes of snow and cold   | 17         | 3         | 0         | 0         | 0         | 1         | 1         | 1         | 0         | 0         | 0         | 23           |
| Deaths on land due to sea storms                                  | 202        | N/D       | N/D       | N/D       | 4         | 2         | 5         | 2         | 7         | 9         | 18        | 249          |
| Earthquakes   | 0          | 0         | 0         | 0         | 0         | 0         | 0         | 9         | 0         | 0         | 0         | 9            |
| <b>TOTAL YEAR</b>   | <b>774</b> | <b>48</b> | <b>54</b> | <b>27</b> | <b>22</b> | <b>41</b> | <b>62</b> | <b>46</b> | <b>39</b> | <b>32</b> | <b>29</b> | <b>1,174</b> |

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

According to data provided by the Directorate-General for Civil Protection and Emergencies, during the period between 1995 and 2014, the total number of fatalities due to natural disasters in Spain reached 1,174.

Regarding causes, the highest number of casualties (311 deaths) were caused by floods (26.5% of the total), followed by fatalities on land due to sea storms with 249 victims (21.2%) and 195 fatalities related to storms, which include lightning and strong winds (16.6%).

There follows fatalities due to heat waves with 168 (14.3% of the total), 129 fatalities occurred during the extinguishing of forest fires (11.0%) and, in a lower number, it must be mentioned 52 fatalities due to snow avalanches (4.4%), 38 deaths due to landslides (3.2%), 23 due to episodes of snow and cold (2%) and, finally, 9 fatalities registered during the Lorca earthquake of 2011 (0.8%).

In 2014, there were 29 fatalities due to natural disasters, three less than in the previous year. Fatalities on land due to sea storms was the phenomenon with the highest number of victims registered in 2014 with 18 deaths, doubling the number of victims of the previous year, followed by 5 victims due to storms, 4 due to forest fires and 2 victims due to floods. On the other hand, there were no victims due to heat waves, avalanches or landslides in 2014.

Floods are the most frequent natural phenomenon in Spain. Floods and freshets registered during the period 1990-2014 generated a total of 346 fatalities. Per autonomous community, Aragón has the highest number of fatalities, 26.6%, followed by Andalusia (22.8%), Catalonia (14.2%) and Extremadura (8.4%). Cantabria and La Rioja, together with the Autonomous Cities of Ceuta and Melilla, were the only regions not to register any fatalities due to floods and freshets during the relevant period.

The two fatalities caused by floods and freshets in 2014, occurred in the Canary Islands and in Catalonia.

In 2014, there were 29 fatalities due to natural disasters, three less than in the previous year

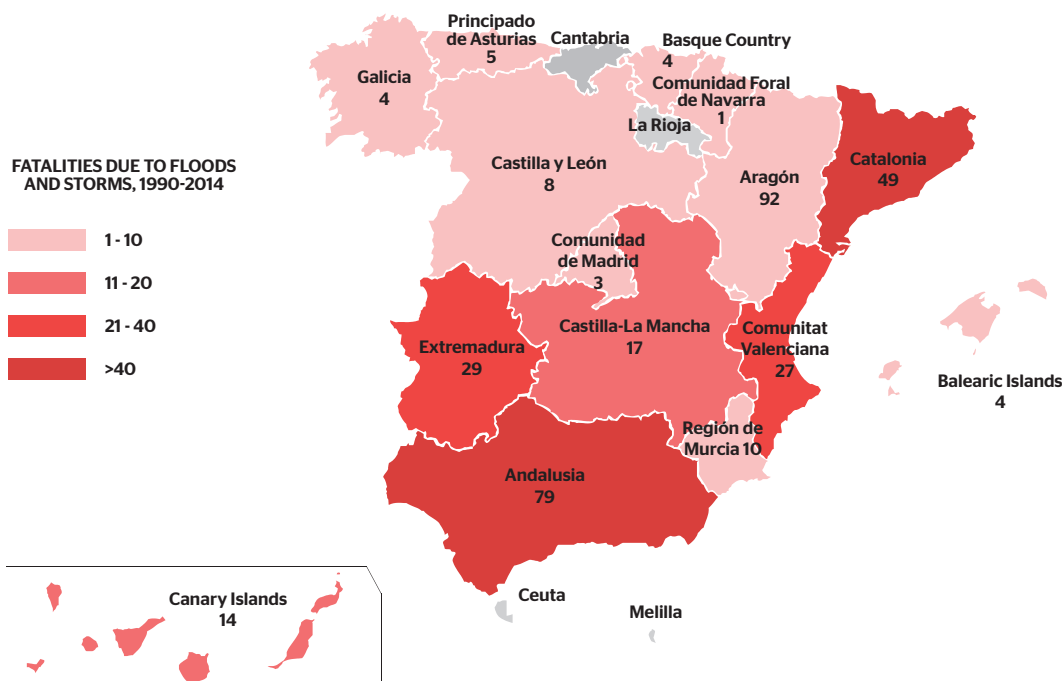
Fatalities on land due to sea storms was the phenomenon with the higher number of victims registered in 2014 with 18 deaths

The 2 fatalities caused by floods and freshets in 2014, one occurred in Andalusia, one in the Canary Islands and one in Catalonia



2.18

NATURAL AND TECHNOLOGICAL DISASTERS



### Definition of the Indicator:

The indicator refers to the evolution of the number of fatalities as a consequence of the different types of natural disasters occurred in Spain.

### Methodological Notes:

- Fatal landslides in Spain are closely associated with heavy rains that cause flooding or freshets. The vast majority of landslides occurred during rain or just days after, as a consequence of it.
- Fatalities due to sea storms refer solely to victims on land due to falls, sea surges, etc. These figures do not include fatalities at sea (drowning, falls, etc.) caused by these phenomena.
- The indicator does not include volcanic eruptions, droughts and earthquakes since, although these phenomena may occur in our country, (droughts are recurring and low-magnitude earthquakes are common in certain areas) they have not caused any fatalities in the period under consideration. The Canary Islands are the only area in Spain with active volcanoes and, therefore, the only area in which risk associated with this phenomenon exists. The last eruptions were those of the Chinyero (lateral volcano of the Teide), in 1909 and those of the Nambroque in 1949 and Teneguía in 1971, both in the isle of La Palma and the one of the submarine volcano of El Hierro, in 2011.
- In 2013, an adjustment of the number of victims due to heat waves from 2004 was carried out by comparing data from the Civil Protection Department with those provided by the Ministry of Health, Social Services and Equality.
- Data regarding the distribution of fatalities due to floods and freshets in 2012 by Autonomous Community included in the 2012 Environmental Profile of Spain were corrected. During that year, 15 fatalities were registered: 7 in Andalusia, 1 in Asturias, 1 in Catalonia and 6 in Murcia.
- The Strategy for the Reduction of Natural Disasters of the UN assesses the regulations and prevention and threat levels against natural disasters of more than 150 countries. This report highlights that the main natural catastrophes posing a threat for Spain are droughts, earthquakes and floods and states that Spain is the fifth country with the highest risk of drought.

### Source:

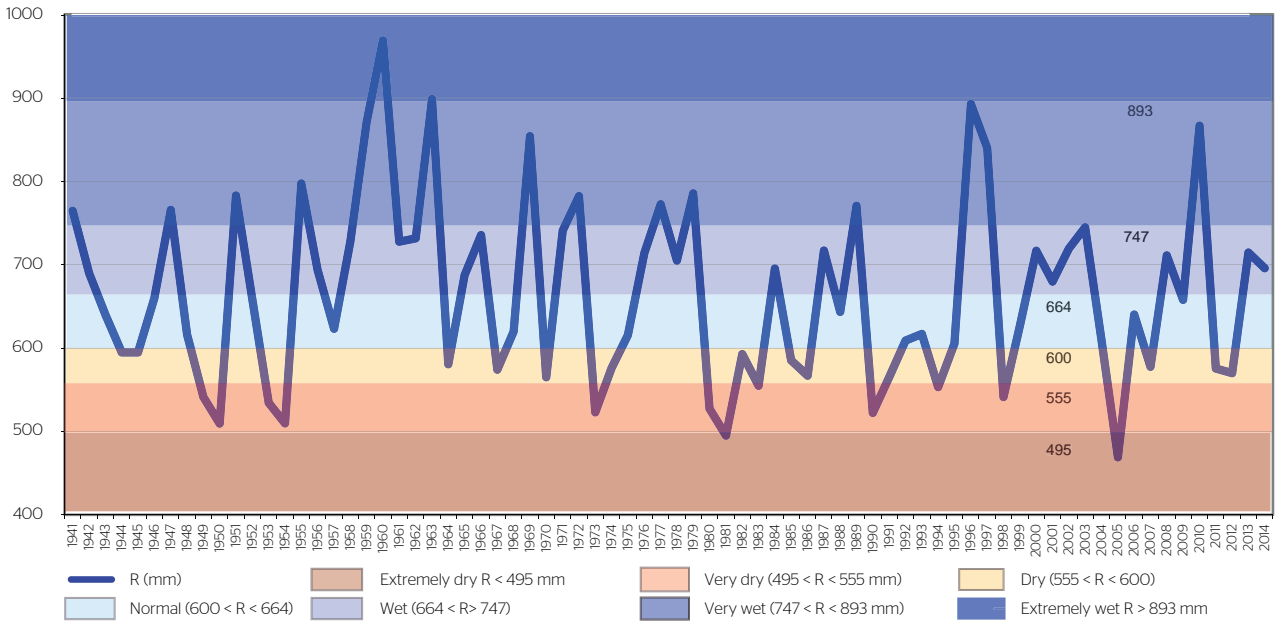
Sub-Directorate General for Planning, Operations and Emergencies. Directorate-General for Civil Protection and Emergencies. Ministry of Home Affairs

### Recommended Websites:

- <http://www.eea.europa.eu/highlights/natural-hazards-and-technological-accidents>
- <http://www.proteccionciviles/web/dgpcye/riesgos>
- [http://ec.europa.eu/research/environment/index\\_en.cfm?pg=hazards](http://ec.europa.eu/research/environment/index_en.cfm?pg=hazards)

## Drought periods

Average Annual Rainfall In Spain (mm)



Source: AEMET. MAGRAMA

Average rainfall reached 696 mm; therefore 2014 was classified as a wet year

2014 was slightly wetter than usual in most of Spain

According to the Annual Climatological Summary of the Meteorological State Agency, year 2014 was slightly wetter than usual in Spain.

Average rainfall reached 696 mm, 4.6% over the average value registered for the reference period (1941-2014).

The year 2014 is therefore classified as a wet year, just like 2013, whereas 2012 was classified as dry year. Regarding the analysis of the drought periods corresponding to each year, for the period 1941-2014 20% of years can be considered normal, whereas 34% have been dry or extremely dry and 46% have been wet or extremely wet.

In relation to the evolution of rainfall volumes throughout 2014, January and February were relatively wet months, so the average rainfall in Spain was 45% of the corresponding standard value. March was a standard month in terms of rainfall. As the second quarter went by rainfall levels progressively decreased up to a value under 50% of the standard value in most of Spain. During the third quarter values below standard values were also registered (around 12%); however, the autumn quarter



turned out wet to very wet in almost every region in Spain, at some points reaching values over 75% of standard values. Finally, December was drier than usual with average rainfall levels more than 50% below the average.

In 2014, the maximum value of daily accumulated rainfall corresponded to the Izaña observatory with 142 mm on the 22 November, followed by the 137.5 mm registered at the observatory of the airport of the Costa Brava in Girona on the 28 September.

In the 74 years of the period 1941-2014, 54% of them had an average annual rainfall below the average of those years.

### Definition of the Indicator:

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

### Methodological note:

- For AEMET, the 1971-2000 reference period (30 years) is representative of rainfall in Spain and it is used to establish the following ranges and to create a generic classification within which to place each year in accordance with its average annual rainfall:
  - Extremely dry: rainfall is below the minimum amount of the series (495 mm).
  - Very dry: rainfall is less than or equal to the reference period's 20<sup>th</sup> percentile and is greater than the minimum recorded in the reference period ( $495 \text{ mm} < R \leq 555 \text{ mm}$ ).
  - Dry: rainfall is greater than the 20<sup>th</sup> percentile and less than or equal to the 40<sup>th</sup> percentile ( $555 \text{ mm} < R \leq 600 \text{ mm}$ ).
  - Normal: rainfall is greater than the 40<sup>th</sup> percentile and less than or equal to the 60<sup>th</sup> percentile ( $600 \text{ mm} < R \leq 664 \text{ mm}$ ), that is to say, the value falls around the average.
  - Wet: rainfall is greater than the 60<sup>th</sup> percentile and less than or equal to the 80<sup>th</sup> percentile ( $664 \text{ mm} < R \leq 747 \text{ mm}$ ).
  - Very wet: rainfall is greater than the 80<sup>th</sup> percentile and less than the maximum amount recorded in the reference period ( $747 \text{ mm} < R \leq 893 \text{ mm}$ ).
  - Extremely wet: rainfall is equal to or greater than the maximum amount recorded in the reference period (893 mm).
- Scarcity of precipitation (meteorological drought) may cause a shortage of water resources (hydrological drought) needed to supply the existing demand. Consequently, there is no universally accepted definition of drought, as it varies from place to place and even every water user has their own definition.
- The EU differentiates clearly between "drought" as a temporary drop in water availability due to lack of precipitation and "water scarcity", which arises when demand for water exceeds the water resources exploitable under sustainable conditions.

### Source:

Data provided by the Department of Climatology and Operational Applications of the State Meteorological Agency (AEMET). MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

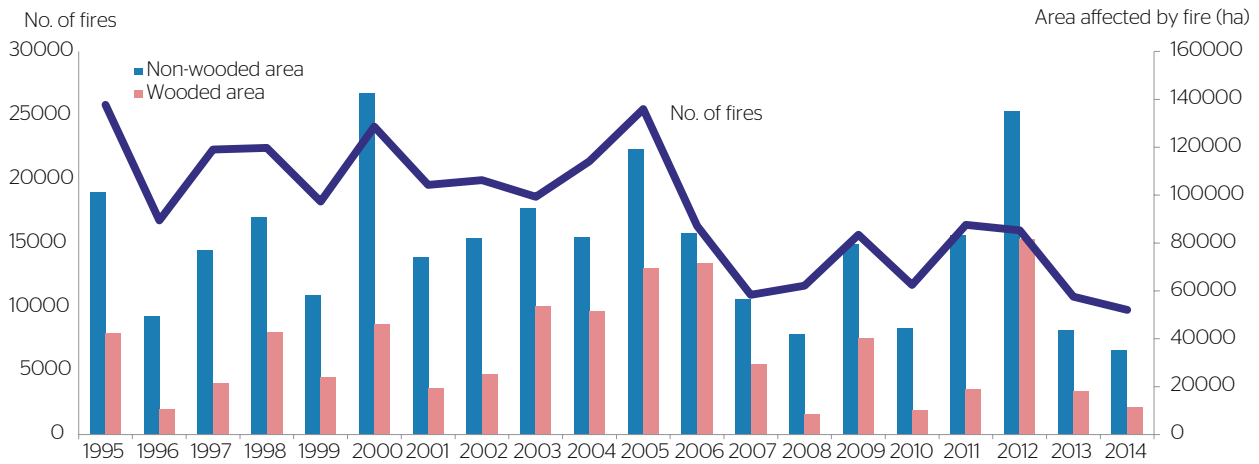
### Recommended websites:

[www.aemet.es](http://www.aemet.es)



## Forest fires

Forest area affected by fire and number of fires, 1995-2014



Source: MAGRAMA

The forest area affected in 2014 by forest fires decreased by 24.6% compared to the previous year

According to provisional statistics provided by the autonomous communities to the Forest Fire Defence Department as advance, in 2014, 3,014 fires (>1 ha) and 6,745 incipient fires (<1 ha) were registered, which amounted to a total of 9,579 events.

In 2014, both, the number of accidents and the areas affected were way lower than the average of the previous ten-year period (2004-2013).

During such period 2004-2013, an average of 15,638 fire events were registered, 5,394 out of this number of events corresponded to fires (> ha), and the average area affected amounted to 117,034 ha, 39,932 ha of which corresponded to tree covered areas.

In 2014 in Spain, 46,555 ha of forest area was affected by fires, of which 11,279 ha was tree covered

In 2014, 7 major fires were registered, as compared to 28 major fires which was the average of the preceding ten-year period

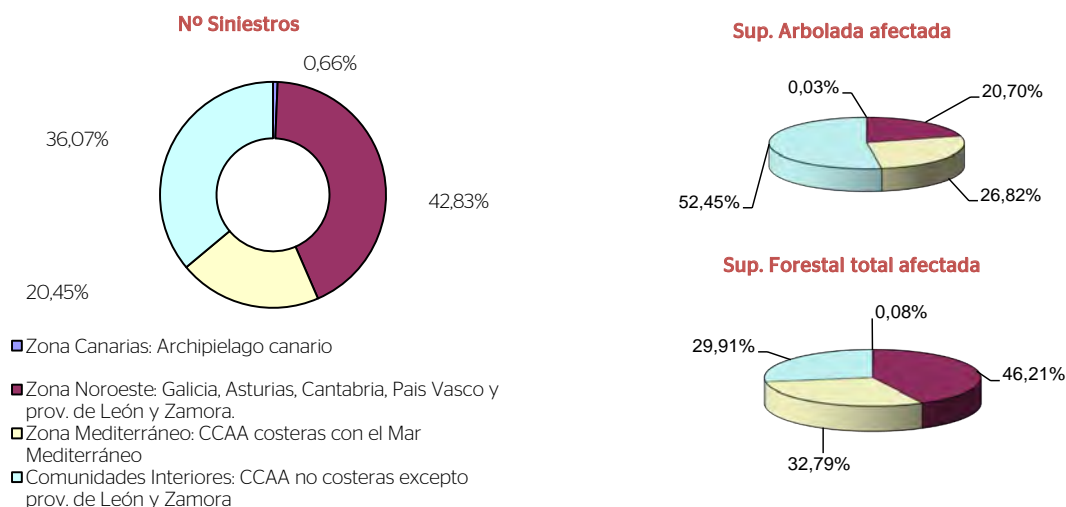
Forest fires for the ten-year period 2004-2013 and year 2014

|  | Average of the period 2004-2013 | 2014      |
|--|---------------------------------|-----------|
| No. of incipient fires (<1 ha)               | 10,244                          | 6,745     |
| No. of fires (<1 ha)                         | 5,394                           | 3,014     |
| Total number of fire events                  | 15,638                          | 9,759     |
| Wooded area (ha)                             | 39,932.50                       | 11,279.50 |
| Forest area (ha)                             | 117,034.20                      | 46,554.70 |
| Affected area (%) / National forest area (%) | 0.425                           | 0.169     |
| No. of Major Fires                           | 28                              | 7         |

Source: data provided by MAGRAMA

Regarding the territorial distribution of accidents registered in 2014, the highest percentage was for the North-Western Area, where 42.8% of the total events occurred, followed by the Inland Communities (non-coastal areas), with 36.1% of fire events and those corresponding to the Mediterranean Area and the Canary Islands, in relation to which 20.4% and 0.7% of fire events were recorded respectively.

### Events and affected areas in 2014



In terms of the percentage of the wooded area affected, Inland Communities were the ones which recorded the highest values in 2014, with 52.45%, followed by the Mediterranean area (26.82%) and the North-Eastern area (20.7%). The total forest area affected, which also includes wooded areas, scrub lands, open mountain and meadows and pastures, shows a different distribution pattern. In this case, the North-Eastern area, with 46.21%, is the one with the highest values, followed by the Mediterranean area (32.79%), the inland Communities (29.91%) and the Canary Islands (0.08%).

In 2014, 7 major forest fires were registered ( $S \geq 500$  forest ha) which amounted to 21% of the total area burnt. The most affected region by major forest fires was the Mediterranean area, where 42% of major fires took place, affecting 57% of the total area. The Alhama de Almería and Lucainena de las Torres fires, both in the province of Almería, affecting 3,212.6 ha and 1,543.1 ha respectively, together with the fires at Cogolludo and Bustares in the province of Guadalajara, with 1,735.5 ha and 1,221.6 ha respectively, were those with the largest extensions registered in 2014.

#### Definition of the Indicator:

The indicator counts the number of events (forest fires) occurring during the relevant year (period between 1 January to 31 December). The number of events include those fires affecting a surface over 1 ha and incipient fires which are fires affecting a surface under or equal 1 ha.

#### Methodological Notes:

Given the heterogeneity of the national territory due to the meteorology, topography, vegetation and social and economic factors, fires are geographically analysed by defining areas which cover territories with similar characteristics. The areas proposed are:

- North-Western Area: It includes the following Autonomous Communities: Galicia, Asturias, Cantabria, Basque Country, and the provinces of León and Zamora.
- Mediterranean Area: It included the Autonomous Communities on the Mediterranean coast, including inland provinces.
- Canary Islands: It includes the Canarian Archipelago.
- Inland Communities: It includes the rest of non-coastal Communities, with the exception of León and Zamora.

#### Source:

Ministry of Agriculture, Food and the Environment. Forest Fires in Spain, 1 January - 31 December 2014. Information Preview. Forest Fire Defence Department. Directorate-General for Rural Development and Forest Policy.

#### Recommended websites:

[http://www.magramagobes.es/biodiversidad/estadisticas/incendios\\_default.aspx](http://www.magramagobes.es/biodiversidad/estadisticas/incendios_default.aspx)



## Road and rail accidents causing environmental damage

| Accidents causing possible environmental damage during the transport of dangerous goods by road and rail, 1997-2013 |            |           |           |           |           |           |           |           |           |           |           |            |
|---|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
|   | 1997-2003  | 2004      | 2005      | 2006      | 2007      | 2008      | 2009      | 2010      | 2011      | 2012      | 2013      | Total      |
| Road  | 312        | 64        | 61        | 46        | 48        | 45        | 47        | 25        | 26        | 94        | 28        | 796        |
| Rail  | 30         | 4         | 2         | 1         | 2         | 1         | 0         | 0         | 0         | 0         | 0         | 40         |
| <b>TOTAL</b>  | <b>342</b> | <b>68</b> | <b>63</b> | <b>47</b> | <b>50</b> | <b>46</b> | <b>47</b> | <b>25</b> | <b>26</b> | <b>94</b> | <b>28</b> | <b>836</b> |

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

In 2013, 28 accidents causing possible environmental damage were registered.

In 2013, 28 environmental impacts were recorded, 23 of which caused soil pollution, 4 generated air pollution and 2 affected water bodies.

The transport of dangerous goods by road or rail implies, in case of accident, a series of environmental risks in adjacent areas. When categorising road and rail accidents, dangerous goods are considered to be those substances that, in the case of an accident during transport, may represent a hazard to the population, property and the environment.

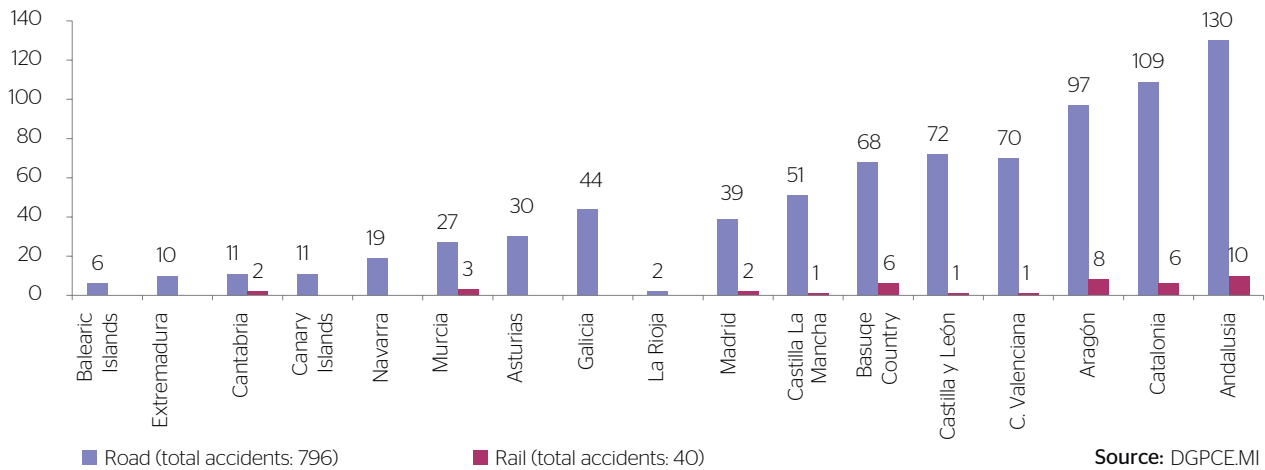
Possible environmental damage is considered to occur when the existence of a leak or spillage (on land, in water or into the atmosphere) with a potentially polluting effect is reported.

During the reference period, 1997-2013, in the transport of dangerous goods, 836 accidents with potential environmental damage were registered. The distribution of these accidents among the different means of transport is very irregular. Therefore, road transport, the one with the highest volume, accounted for 796 accidents and rail transport, the one with the lowest volume, accounted for 40 accidents in the last 5 years.

The most serious accident in the transport of goods in which dangerous substances are involved usually cause fires, explosions, leaks and spillages and provoke dangerous thermal, mechanical and chemical phenomena, the consequences of which may be catastrophic for the environment and people. The number of accidents occurring during the transport of dangerous goods during the reference period 1997-2013 shows a significant variability, since accidents depend on many factors, not only in the maintenance of infrastructures. As observed in the table, which as well as the global figures includes the evolution during the last decade of the number of accident with potential environmental damage, with the exception of year 2012, in which the highest number of accidents within the series was registered, the general trend shows a clear reduction in comparison to the beginning of the period. In that regard, in 2013, 28 accidents with potential environmental damage related to the road transport of goods were registered.

Even though the causes of accidents respond to several factors, the occurrence or non-occurrence accidents is related to infrastructure, maintenance and geographic

### Number of accidents causing possible environmental damage during the transport of dangerous goods by road and rail, 1997-2013



location, since communication nodes and the existence of industry make the number of transport within these areas much frequent. During the period between 1997-2013, in terms of Autonomous Communities, Andalusia, with 140 accidents (130 road accidents and 10 rail accidents), was the community which registered the highest number of accidents, followed by Catalonia with 115 accidents (109 road accidents and 6 rail accidents) and Aragón with 105 accidents (97 road accidents and 8 rail accidents). On the other hand, the communities which registered the lowest number of accidents, excluding La Rioja for which there is no complete data series, were: The Balearic Islands with six road accidents, Extremadura with ten road accidents, the Canary Islands with 11 and Cantabria with 13 (11 road accidents and 2 rail accidents).

For the period 1997-2013, the total number of impacts to the environment with potential environmental damage reached 827. 660 accidents out of the total number registered caused soil pollution, 112 accidents affected water bodies and 97 accidents generated air pollution. In 2013, 28 environmental impacts were recorded, 23 of which caused soil pollution, 4 generated air pollution and 2 affected water bodies.

#### Definition of the Indicator:

The indicator studies the evolution by means of transport (road and rail transport) of the number of accidents causing potential environmental damage.

#### Methodological note:

- When categorising road and rail accidents, dangerous goods are considered to be those substances that, in the case of an accident during transport, may represent a hazard to the population, property and the environment. Possible environmental damage is considered to occur when the existence of a leak or spillage (on land, in water or into the atmosphere) with a potentially pollutant effect is reported.
- The total number of impacts to the environment with possible environmental damage may not match the total number of accidents since the same accident may affect several environments, for example, the same spill can have a negative impact both on the soil and on a water body.

#### Source:

Data provided by the Directorate-General for Civil Protection and Emergencies. Ministry of Home Affairs.

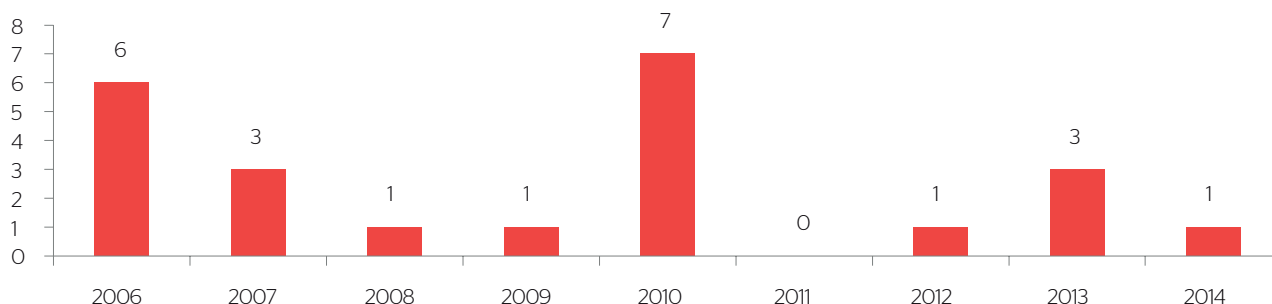
#### Recommended Websites:

- <http://www.proteccionciviles/web/dgpcye/riesgos>
- <http://www.eea.europa.eu/highlights/natural-hazards-and-technological-accidents>
- [http://ec.europa.eu/research/environment/index\\_en.cfm?pg=hazards](http://ec.europa.eu/research/environment/index_en.cfm?pg=hazards)



## Industrial accidents involving hazardous substances

### Number of accidents in industrial activities under the scope of the Seveso directive



Source: DGPCE.MI

The serious accident that occurred in Seveso (Italy) and other similar accidents such as the one in Flixborough, United Kingdom, encourage the European Union to develop a regulation aimed at preventing accidents in some industrial sectors. The SEVESO Directive was approved by means of Directive 82/501/EEC for the prevention of serious accidents in those industries in which dangerous substances are involved, the promotion of safety among workers and limitation of the impact of such accidents on the population and the environment.

Fourteen years after the approval of Directive SEVESO I, Directive 96/82/EC, known as SEVESO II, replaced the previous one. Among the causes that led to the amendment of this regulation was the need of extending the scope to cover a higher number of activities and substances, harmonizing protection levels for the entire EU and the need of collecting further information.

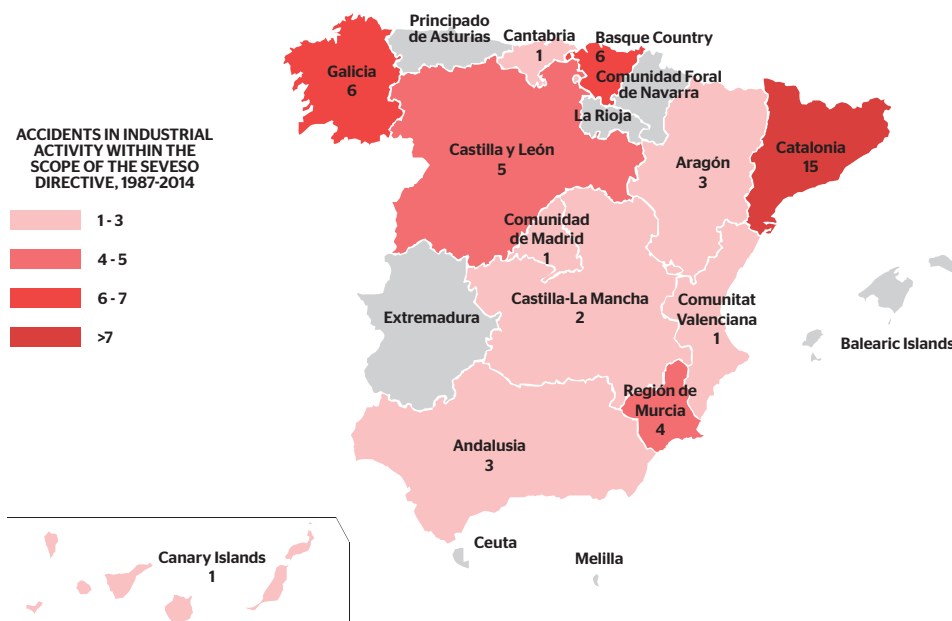
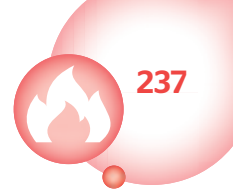
Today, this Directive has been replaced by Directive 2012/18/EU, on the control of major-accident hazards involving dangerous substances. The provisions of the new SEVESO III will be applicable from 1 June 2015.

The main amendments of the Directive are the adaptation to the changes implemented to the classification system of substances and chemicals by Regulation 1272/2008, Regulation CLP, on the classification, labelling and packaging of substances and mixtures and the adaptation to the requirements of the Aarhus Convention. Besides, it is established that it is required to implement an inspection programme and to conduct annual on-site inspections to those establishments with higher risks of accident and every three years for the other establishments; it also updates the activities and substances included in the new regulation which now covers a higher number of companies subject to these obligations.

The evolution of the number of industrial accidents within the scope of the SEVESO regulations in the period between 2006 and 2014 shows an irregular trend. During that period, a total of 23 accidents were recorded in Spain, with a maximum ratio of 7 accidents/year registered in 2010. In the last year, there was just 1 accident in industrial facilities falling within the scope of the SEVESO III Directive in the Autonomous Community of Murcia.

In 2014, only one accident occurred within the scope of the SEVESO Directive in Murcia.

In the last decade, in Spain, a total of 23 accidents falling within the scope of the SEVESO Directive were registered, with an annual maximum of 7 accidents in 2010.



In relation to the whole period (1987-2014), a total number of 48 industrial accidents falling within the scope of the SEVESO III Directive occurred. When analysing the distribution of these accidents by autonomous community, most of the events registered correspond to those autonomous communities with a significant density of industrial tissue affected by these regulations. Catalonia, with 15 accidents included within the scope of the Directive (31.3% of the total) is the one with the highest number, followed by the Basque Country and Galicia, both with 6 accidents (12.5%) and Castilla y León with 5 accidents (10.4% of the total). Accidents have concentrated in areas with higher industrial activity; besides, most accidents took place in the petrochemical and refining industries and in the industries for the manufacturing of chemicals.

As can be observed on the map, no accidents occurred in the Autonomous Communities of Asturias, Baleares, Extremadura, La Rioja and Navarra during this period.

#### Definition of the Indicator:

The indicator shows the evolution in the number of accidents regarding activities included within the scope of the SEVESO Directive.

#### Methodological Notes:

- Directive 96/82/CE on the control of major-accident hazards involving dangerous substances (Seveso II) is intended to prevent accidents of this kind and reduce their consequences for human health and safety and the environment. It replaces Directive 82/501/EEC, (SEVESO I). Later on, on the 24 July 2012, Directive 2012/18/EU, SEVESO III, was published, on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Directive 96/82/EC.
- Serious accidents: any incident such as emissions in the form of leaks, spills, fires, or major explosions as a consequence of an uncontrolled process during the operation of any facility to which the SEVESO Directive applies, and that represents a major-accident hazard, of either immediate or delayed effect, to human health, property or the environment, whether inside or outside the facility, and in which one or more dangerous substances are involved. It should be pointed out that there are other types of accidents, the consequences of which are equally serious for the environment, that do not fall within the scope of the Seveso Directive. These include mining accidents, such as the one caused by the failure of the Aznalcollar dam (Seville), in April 1998.

#### Source:

Data provided by the Sub-Directorate-General for Planning, Operations and Emergencies. Directorate-General for Civil Protection and Emergencies. Ministry of Home Affairs

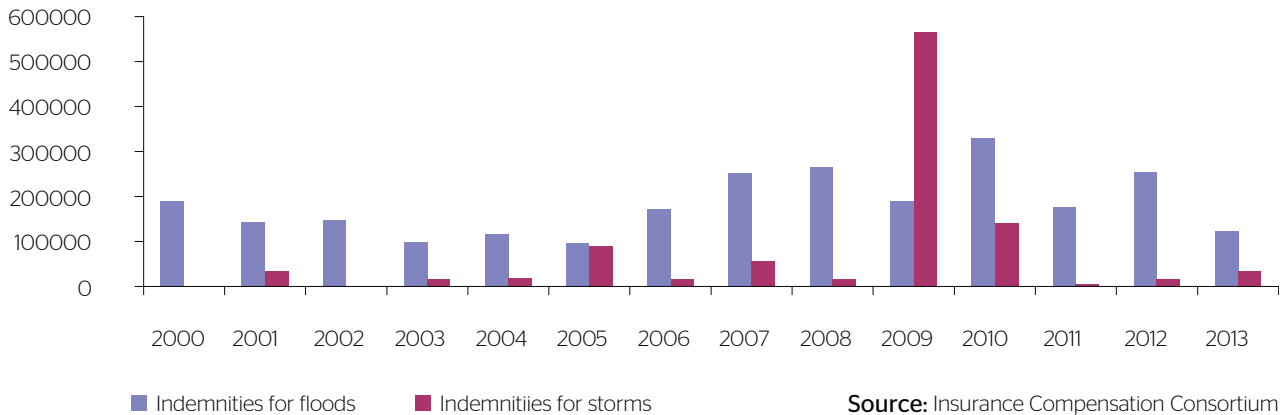
#### Recommended websites:

<http://www.proteccioncivil.es/web/dgpcye/riesgos>



## Extraordinary risks: compensations resulting from floods and storms

**Evolution of indemnities resulting from floods and storms**  
(thousands of euros)



The intensity of natural disasters in Spain is lower than that of other regions; however, situations as devastating as those that took place in Biescas (Huesca) or the Lorca earthquake (Murcia) prove the destructive power of these types of extraordinary phenomena.

In order to compensate for the damages caused to people and goods by certain natural phenomena and certain events arising from political or social occurrences, the Insurance Compensation Consortium, a public body, was created; its legal framework is defined by Royal Legislative Decree 7/2004, of 29 October.

Its functions include the coverage, under the compensation regime, of those extraordinary events occurring in Spain related to risks within its territory. Extraordinary events are defined as natural phenomena such as earthquakes and tidal waves, floods, volcanic eruptions, atypical cyclonic storm, fall of astral bodies and meteorites.

Events included in the coverage of extraordinary risks are obviously phenomena characterised by an absolute lack of regularity, both regarding frequency and intensity.

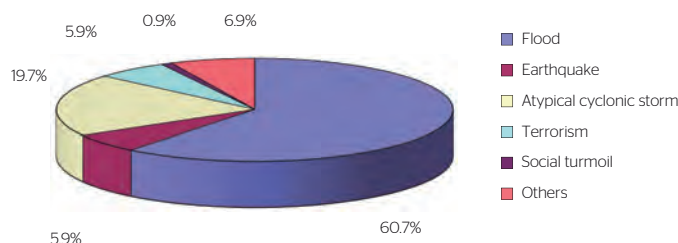
Cased on data included in the Statistics on Extraordinary Risks by the Insurance Compensation Consortium, shows the evolution of those indemnities resulting from floods and storms during the period 2000-2013. In this regard, according to data referring to the last year, the number of cases and compensation resulting from floods and storms amounted to 18,650 and 20,137 cases reaching 122,714 and 34,035 Euros respectively.

In 2013, the Insurance Compensation Consortium resolved 18,650 and 20,137 claims corresponding to floods and storms, respectively

These costs reached 122,714 and 34,035 Euros respectively



Distribution of indemnities by cause, 1971-2013



Source: Insurance Compensation Consortium

Among the causes giving rise to compensations during the reference period 1971-2013, floods and storms accounted for 80.4% of compensations. The risk which causes more damage in Spain is flooding with 60.7% of compensation. Flooding is defined as the water logging of soil caused by rain or ice melt by water from lakes with natural outlets, of rivers and natural surface water courses when their usual courses are overflowed. It also includes the incursion of the sea on the coast, even if there is no water logging. The atypical cyclonic storm which includes, among others, tornadoes and extraordinary winds (gusts over 120 km/h) accounted for 19.7% of compensation payments. During this period, more than 11 million cases were solved; such cases gave rise to compensations reaching 8.8 million Euros.

**Definition of the Indicator:**

The indicator shows the evolution of compensation by the Insurance Compensation Consortium as a consequence of floods and storms.

**Methodological Notes:**

- The Insurance Compensation Consortium is established as a public business entity legally governed by the Royal Legislative Decree 7/2004, of 29 October, which approves the Recast Text on the Articles of Association of the Insurance Compensation Consortium.
- Those events included in the coverage of “extraordinary risks” are phenomena characterized by an absolute lack of regularity as regards their occurrence (both in relation to frequency and intensity) and, therefore, since their consequences are significantly variable, with a high probability of accumulation both as regards time and location.
- The European Macroseismic Scale of 1998, known as EMS-98, offers the basis for the evaluation of the intensity of earthquakes and it classifies them in XII classes. Level VII is considered “Damaging”.

**Source:**

Statistics on Extraordinary Risks. 1971-2013 series. Insurance Compensation Consortium. Ministry of Economy and Competitiveness

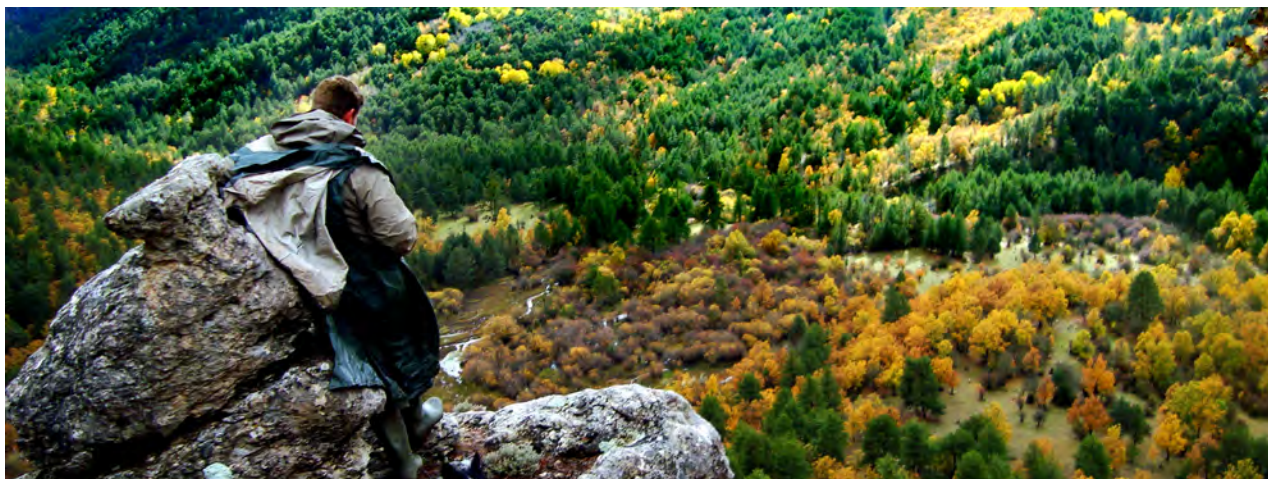
**Recommended Websites:**

- <http://www.consorseguros.es/web/157>
- [http://www.consorseguros.es/web/ad\\_re](http://www.consorseguros.es/web/ad_re)
- [http://www.consorseguros.es/web/c/document\\_library/get\\_file?uuid=548d4f59-b6c5-40dd-b06b-98dbcefd790f&groupId=10124](http://www.consorseguros.es/web/c/document_library/get_file?uuid=548d4f59-b6c5-40dd-b06b-98dbcefd790f&groupId=10124)



**Part 3.**  
**INFORMATION BY AUTONOMOUS**  
**COMMUNITY: BASIC DATA**





# INFORMATION BY AUTONOMOUS COMMUNITY: BASIC DATA

This chapter extends the information provided by this publication about autonomous communities. Many of the indicators included information referred to the different autonomous territories within our country. Nonetheless, since the 2007 Environmental Profile of Spain first included a specific chapter providing information by autonomous community, this section has been replicated for the same purpose so as to provide further information, thus broadening nation-wide information and enriching the analysis carried out.

In terms of presentation, the descriptive sheet format already adopted in previous editions is maintained, but to simplify the content and improve interpretation, it has been modified. Such contents result from a process of consultation with the Autonomous Focal Points of the Spanish Environment and Observation Network (EIONET), which is carried out on a yearly basis prior to the preparation of this publication.

In this edition, the contents are structured in the next six sections:

- Geographic and Administrative Information
- Socio-Economic Information
- Information on the State of the Environment, including soil, nature, agriculture, waste, water, air and energy.
- Reports on the State of the Environment and Sustainable Development of the Autonomous Community
- Links to websites of interest on the environment of the autonomous community
- Other data or relevant information

The data have been obtained from official national sources used to fulfil certain information obligations within Spain. Such data are available separately for each autonomous community. In some occasions, these numbers could be different than those generated in autonomous communities. However, it is deemed preferable to use such sources, since they ensure homogeneous data which, where applicable,

would allow data to be compared between autonomous communities and to the average figures in Spain. This would no longer be a possibility should sources from autonomous communities be used, since the changes in calculations could differ and measurements and calculations could provide different results, even when dealing with the same variable or having the same name. However, as every year, there is a chance that autonomous communities provide their own numbers and data when deemed convenient. In such case, the source will be well identified, although comparison is no longer a possibility as mentioned above.

The three last sections of the sheets offer to the autonomous communities the possibility of including references to existing reports on environmental topics or sustainable development, the most interesting web sites on environmental issues and any other information or venture of environmental relevance which can be of interest.

Finally, the section "Sources of information" describes the sources used for the calculation of variables/indicators. When any autonomous community has employed a different source for any of the variables considered, such circumstance specified in the corresponding chart.

This chapter is an essential element of the Environmental Profile of Spain and only has been possible within the framework of the Spanish EIONET Network, without whose continuous participation, the report would not have been possible..





## ANDALUSIA

### Basic geographic and administrative information

**Statute of Autonomy:** Organic Act 2/2007, of 19 March (BOE [Spanish State Gazette] 68, 20 March 2007)

**Area:** 87,597 km<sup>2</sup>

**Average coastline length:** 948 km (11.7% of the total)

**Capital:** Sevilla **Provinces:** 8 **Municipalities:** 771

**Population (2014):** 8,402,305 inhab.

**Population density (2014):** 95.9 inhab./km<sup>2</sup>

**Change in No. of inhabitants (%) 2000-2014:** 14.5 / **2013-2014:** -0.5



### Basic socio-economic information

| POPULATION BY SIZE OF MUNICIPALITY (%). YEAR 2014 |          |                |                 |                  |
|---|----------|----------------|-----------------|------------------|
| SCOPE   | < 10,000 | 10,001-100,000 | 100,001-500,000 | > 500,000 inhab. |
| Andalusia   | 19.6     | 44.7           | 20.7            | 15.0             |
| Spain   | 20.9     | 39.6           | 23.6            | 16.0             |

| GDP PER CAPITA AT MARKET PRICES. YEAR 2014 (1 <sup>st</sup> EST.) |          |           |                      |
|---|----------|-----------|----------------------|
| SCOPE   | €/inhab. | Spain=100 | 2013-2014 Change (%) |
| Andalusia   | 16,884   | 74.1      | 0.2                  |
| Spain   | 22,780   | 100       | 1.2                  |

| EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|--|-------------|----------|--------------|----------|
| SCOPE                                      | Agriculture | Industry | Construction | Services |
| Andalusia                                  | 8.4         | 8.5      | 5.1          | 78.0     |
| Spain                                      | 4.2         | 13.7     | 5.7          | 76.3     |

| GVA SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|-------------------------------------|-------------|----------|--------------|----------|
| SCOPE                               | Agriculture | Industry | Construction | Services |
| Andalusia                           | 4.9         | 12.8     | 6.2          | 76.1     |
| Spain                               | 2.5         | 17.5     | 5.6          | 74.4     |

| UNEMPLOYMENT RATE              |      |      |      |      |      |      |      |
|--------------------------------|------|------|------|------|------|------|------|
| 2007                           | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| 12.8                           | 17.7 | 25.2 | 27.8 | 30.1 | 34.4 | 36.2 | 34.8 |
| Average in Spain in 2014: 24.4 |      |      |      |      |      |      |      |

| GROSS DISPOSABLE HOUSEHOLD INCOME (2012) |          |           |                      |
|--|----------|-----------|----------------------|
| SCOPE                                    | €/inhab. | Spain=100 | Change 2011-2012 (%) |
| Andalusia                                | 11,403   | 79.1      | -4.2                 |
| Spain                                    | 14,414   | 100       | -3.1                 |

Source: INE (for all variables)

### Basic information on the status of the environment

| LAND. LAND DISTRIBUTION IN % (2013) |               |                    |                      |   |                 |       |
|-------------------------------------|---------------|--------------------|----------------------|---|-----------------|-------|
| Scope                               | Water surface | Artificial surface | Agricultural surface | Forest land and other semi-natural areas (excluding wetlands) | Wetland surface | Total |
| Andalusia                           | 1.2           | 2.6                | 45.2                 | 50.3  | 0.7             | 100.0 |
| Spain                               | 0.8           | 2.5                | 41.9                 | 54.6  | 0.2             | 100.0 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| NATURE. PROTECTED LAND AREA (2014) |                      |      |             |      |                     |      |                                  |           |          |
|------------------------------------|----------------------|------|-------------|------|---------------------|------|----------------------------------|-----------|----------|
| Scope                              | Total protected area |      | PA          |      | Natura 2000 Network |      | Other international figures (ha) |           |          |
|                                    | ha                   | %    | ha          | %    | ha                  | %    | MAB                              | RAMSAR    | SPAMI    |
| Andalusia                          | 2,814,849.6          | 32.1 | 1,625,925.6 | 18.6 | 2,588,588.2         | 29.5 | 1,529,087.2                      | 139,787.5 | 37,877.7 |
| Spain                              | 16,145,136.6         | 31.9 | 6,316,313.9 | 12.5 | 13,783,612.5        | 27.2 | 4,791,679.0                      | 281,220.5 | 51,857.9 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| NATURE. NUMBER AND AREA OF PROTECTED SPACES IN THE NATURA 2000 NETWORK: SCIs AND SPABs (2014): |                               |                            |                          |                            |   |                             |                       |                             |
|--|-------------------------------|----------------------------|--------------------------|----------------------------|---|-----------------------------|-----------------------|-----------------------------|
| Scope  | Sites of Community Importance |                            |                          |                            | Special Protection Areas for Wild Birds |                             |                       |                             |
|  | Number of SCIs                | Total surface of SCIs (ha) | Land surface of SCIs (%) | Marine surface of SCIs (%) | Number of SPABs                         | Total surface of SPABs (ha) | Land surface SPAB (%) | Marine surface of SPABs (%) |
| Andalusia  | 189                           | 2,583,816.9                | 97.3                     | 2.7                        | 63.0                                    | 1,645,004.6                 | 98.2                  | 1.8                         |
| Spain  | 1,466                         | 15,777,555.2               | 74.4                     | 25.6                       | 643.0                                   | 15,318,654.4                | 66.1                  | 33.9                        |

In hectares and percentages (percentages have been calculated over the total surface of each figure)

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| AGRICULTURE. ORGANIC FARMING AND IRRIGATION SURFACES (% OF SURFACE AND NUMBER OF OPERATORS IN FARMING) |  |  |   |
|--|--|--|---|
| Scope  | Percentage of irrigation surface with respect to utilised agricultural area (2014) | Percentage of organic farmland with respect to utilised agricultural area (2013) | Organic livestock farming: Number of farms (2013) |
| Andalusia  | 20.6   | 15.8   | 3,309   |
| Spain  | 14.4   | 6.3  | 5,808   |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| WASTE. HOUSEHOLD WASTE PER INHABITANT (kg/inhab.) |       |       |       |       |                      |
|---|-------|-------|-------|-------|----------------------|
| Scope   | 2005  | 2010  | 2011  | 2012  | 2005-2012 Change (%) |
| Andalusia   | 517.7 | 532.4 | 478.2 | 511   | -1.3                 |
| Spain   | 502.8 | 421.7 | 406.8 | 396.5 | -21.1                |

Source: INE

| WATER. AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day) |      |      |      |      |      |      |      |      |                      |
|---|------|------|------|------|------|------|------|------|----------------------|
| Scope   | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2005-2012 Change (%) |
| Andalusia   | 200  | 180  | 158  | 157  | 156  | 143  | 140  | 129  | -35.5                |
| Spain   | 170  | 164  | 157  | 154  | 149  | 144  | 142  | 137  | -19.4                |

Source: INE

| AIR. AVERAGE ANNUAL CONCENTRATION IN URBAN AREAS WITH OVER 50,000 INHABITANTS. |                                 |                                   |                  |                                   |            |
|--|---------------------------------|-----------------------------------|------------------|-----------------------------------|------------|
| SCOPE  | AVERAGE IN ANDALUSIA            |                                   | AVERAGE IN SPAIN |                                   |            |
|  | POLLUTING AGENT / CHANGE PERIOD | 2013 ( $\mu\text{g}/\text{m}^3$ ) | Change (%)       | 2013 ( $\mu\text{g}/\text{m}^3$ ) | Change (%) |
| NO <sub>2</sub> (2001-2013 CHANGE)   |                                 | 21.3                              | -33.5            | 22.9                              | -35.2      |
| PM10 (2001-2013 CHANGE)  |                                 | 25.4                              | -42.0            | 20.9                              | -44.8      |
| PM2.5 (2010-2013 CHANGE)   |                                 | 14.4                              | -15.6            | 11.3                              | -10.1      |
| O <sub>3</sub> Daily eight-hour maximum values (2005-2013 CHANGE)              |                                 | 83.7                              | 4.6              | 75.6                              | 15.3       |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| ENERGY. ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab.) |       |       |       |       |       |                      |
|--|-------|-------|-------|-------|-------|----------------------|
| Scope  | 2010  | 2011  | 2012  | 2013  | 2014  | 2010-2014 Change (%) |
| Andalusia  | 4.843 | 4.745 | 4.708 | 4.538 | 4.523 | -6.6                 |
| Spain  | 5.863 | 5.735 | 5.652 | 5.540 | 5.519 | -5.9                 |

Source: data compiled by the authors from the REE and INE data

## Environmental reports

- Environmental Report of Andalusia (IMA, Spanish acronym), 2013.
- Basic Environmental Data of Andalusia, 2014.

## Links to websites of interest on the environment

- Website of the Regional Ministry of the Environment and Land Planning: <http://www.juntadeandalucia.es/medioambiente/site/portalweb>
- REDIAM's Web Channel: <http://www.juntadeandalucia.es/medioambiente/site/web/rediam>
- Environmental Report of Andalusia (IMA, Spanish Acronym) and IMA statistics: [www.juntadeandalucia.es/medioambiente/rediam/IMA/](http://www.juntadeandalucia.es/medioambiente/rediam/IMA/) / [www.juntadeandalucia.es/medioambiente/rediam/estadisticas\\_ima](http://www.juntadeandalucia.es/medioambiente/rediam/estadisticas_ima)
- Open Geospatial Consortium Services (OGC): [www.juntadeandalucia.es/medioambiente/rediam/ogc](http://www.juntadeandalucia.es/medioambiente/rediam/ogc)
- Environmental Indicators of Andalusia: [www.juntadeandalucia.es/medioambiente/rediam/indicadores\\_ambientales](http://www.juntadeandalucia.es/medioambiente/rediam/indicadores_ambientales)
- Audiovisual Media Archive of the Regional Ministry of the Environment and Land Planning: <http://www.bancoaudiovisual.juntadeandalucia.es/>
- OGC REDIAM General Service Viewer: <http://laboratorioarediam.cicaes/VisorGenerico/>
- Beach Viewer of Andalusia: <http://laboratorioarediam.cicaes/VisorTemperaturas/>
- Coast and marine environment viewer of Andalusia: [www.juntadeandalucia.es/medioambiente/visorlitoral](http://www.juntadeandalucia.es/medioambiente/visorlitoral)

## Relevant data or information

- **Digital Model of Annual Solar Irradiation in Andalusia.** The Rediam generated this model for the whole of Andalusia with a 10 m<sup>2</sup> resolution for the 12 months of the year.
- **European Flood Awareness System (EFAS).** Experts in the Environmental Information Network of Andalusia (Rediam) of the Regional Ministry of the Environment and Land Planning have presented a common project which aims to create a tool to foresee, reduce or mitigate the consequences of this phenomenon on any of the land areas up to 10 days in advance.
- **Andalusian industries reduced their Carbon Dioxide (CO<sub>2</sub>) emissions by 22.4 tonnes.** According to the emissions inventory by the Regional Ministry of the Environment and Land Planning, the electric power sector contributes with a reduction of 2.5%.
- **The Natural Space of Sierra Nevada, the first protected area in Spain to be included in the IUCN Green List.** It has been included in the Green List of Protected Areas during the 2014 World Parks Congress by the International Union for Conservation of Nature (IUCN).
- **The REDIAM has prepared special cartography from the orthophotography of the National Plan of Aerial Orthophotography (PNOA, Spanish acronym) of years 2005 and 2009 so as to evaluate the territorial incidence of the PASENER.** Elements and installations such as wind turbines, photovoltaic power stations and solar thermal power facilities have been identified. Such cartography may be easily checked through a web map service (WMS).
- **The Ministry of the Environment confirms the presence of 46 breeding pairs of red kites in Andalusia.** The red kite (*Milvus milvus*) is a bird species classified as endangered. Its population has shown a slight increase since 2005. 91% of breeding pairs have been found within the Natural Space of Doñana.
- **In the framework of the Eremita Project,** four breeding pairs of bald ibis have nested for the first time in the coast of the municipality of Conil de la Frontera (Cádiz), approximately 11 km away from the main breeding area, which makes the province of Cádiz the only European enclave with a population of this endangered species.
- **The Regional Government of Andalusia, in the framework of the Action Plan for Employment in Andalusia,** has generated 280,816 green jobs during 2014 accounting for all of the provinces of Andalusia, including the forest improvement and environmental and rural regeneration improvement programme.
- **The Governing Council has agreed to commence the arrangements to prepare the 2020 Environmental Job Creation Strategy in Andalusia.** The new planning will increase support to the sectors linked to 'green economy', which employ 86,000 people in Andalusia.
- **In the framework of the Programme for the Introduction of the Bearded Vulture carried out by the Regional Government of the Environment and Land Planning, the presence of the first bearded vulture nest in Andalusia has been confirmed.** This is the first breeding pair arising from released birds.
- **The Ministry of the Environment has recovered over 319,000 hectares affected by invasive plant species in several natural enclaves.** The works for the eradication and control of exotic flora and fauna in Andalusia amounted for an investment of 4.5 million Euros by the Regional Government and the generation of 10,749 green jobs.



## ARAGÓN

### Basic geographic and administrative information

**Statute of Autonomy:** Organic Act 8/82, of 10 August (BOE [Spanish State Gazette] 195, 16 August 1982) Reform passed by virtue of Organic Act 5/2007, of 20 April (BOE [Spanish State Gazette] 97, of 23 April 2007)

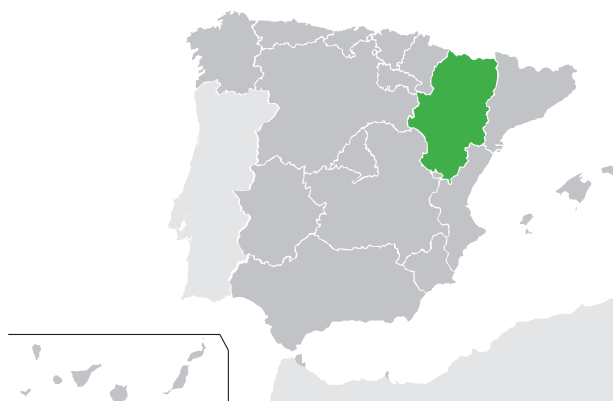
**Area:** 47,720 km<sup>2</sup>

**Capital:** Zaragoza **Provinces:** 3 **Municipalities:** 731

**Population (2014):** 1,325,385 inhab.

**Population density (2014):** 27.8 inhab./km<sup>2</sup>

**Change in No. of inhabitants (%) 2000-2014:** 11.4 / **2013-2014:** -1.6



### Basic socio-economic information

| POPULATION BY SIZE OF MUNICIPALITY (%). YEAR 2014 |          |                |                 |                  |
|---|----------|----------------|-----------------|------------------|
| SCOPE   | < 10,000 | 10,001-100,000 | 100,001-500,000 | > 500,000 inhab. |
| Aragón  | 31.2     | 18.5           | 0.0             | 50.3             |
| Spain   | 20.9     | 39.6           | 23.6            | 16.0             |

| GDP PER CAPITA AT MARKET PRICES. YEAR 2014 (1 <sup>st</sup> EST.) |          |           |                      |
|---|----------|-----------|----------------------|
| SCOPE   | €/inhab. | Spain=100 | 2013-2014 Change (%) |
| Aragón  | 24,957   | 109.6     | 1.0                  |
| Spain   | 22,780   | 100       | 1.2                  |

| EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|--|-------------|----------|--------------|----------|
| SCOPE                                      | Agriculture | Industry | Construction | Services |
| Aragón                                     | 5.3         | 18.4     | 5.8          | 70.4     |
| Spain                                      | 4.2         | 13.7     | 5.7          | 76.3     |

| GVA SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|-------------------------------------|-------------|----------|--------------|----------|
| SCOPE                               | Agriculture | Industry | Construction | Services |
| Aragón                              | 5.2         | 23.4     | 5.9          | 65.6     |
| Spain                               | 2.5         | 17.5     | 5.6          | 74.4     |

| UNEMPLOYMENT RATE              |      |      |      |      |      |      |      |
|--------------------------------|------|------|------|------|------|------|------|
| 2007                           | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| 5.3                            | 7.3  | 13.1 | 15.0 | 17.1 | 18.7 | 21.4 | 20.2 |
| Average in Spain in 2014: 24.4 |      |      |      |      |      |      |      |

| GROSS DISPOSABLE HOUSEHOLD INCOME (2012) |          |           |                      |
|--|----------|-----------|----------------------|
| SCOPE                                    | €/inhab. | Spain=100 | Change 2011-2012 (%) |
| Aragón                                   | 15,770   | 109.4     | -2.7                 |
| Spain                                    | 14,414   | 100       | -3.1                 |
| Source: INE (for all variables)          |          |           |                      |

### Basic information on the status of the environment

| LAND. LAND DISTRIBUTION IN % (2013)   |               |                    |                      |   |                 |       |
|---|---------------|--------------------|----------------------|---|-----------------|-------|
| Scope   | Water surface | Artificial surface | Agricultural surface | Forest land and other semi-natural areas (excluding wetlands) | Wetland surface | Total |
| Aragón  | 0.7           | 1.0                | 43.5                 | 54.7  | 0.1             | 100.0 |
| Spain   | 0.8           | 2.5                | 41.9                 | 54.6  | 0.2             | 100.0 |
| Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment) |               |                    |                      |   |                 |       |

| NATURE. PROTECTED LAND AREA (2014)  |                      |      |             |      |                     |      |                                  |           |          |
|---|----------------------|------|-------------|------|---------------------|------|----------------------------------|-----------|----------|
| Scope   | Total protected area |      | PA          |      | Natura 2000 Network |      | Other international figures (ha) |           |          |
|   | ha                   | %    | ha          | %    | ha                  | %    | MAB                              | RAMSAR    | SPAMI    |
| Aragón  | 1,413,131.6          | 29.6 | 158,478.2   | 3.3  | 1,360,792.2         | 28.5 | 117,265.3                        | 16,700.9  | 0.0      |
| Spain   | 16,145,136.6         | 31.9 | 6,316,313.9 | 12.5 | 13,783,612.5        | 27.2 | 4,791,679.0                      | 281,220.5 | 51,857.9 |
| Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment) |                      |      |             |      |                     |      |                                  |           |          |

| NATURE. NUMBER AND AREA OF PROTECTED SPACES IN THE NATURA 2000 NETWORK: SCIs AND SPABs (2014):       |                               |                            |                          |                            |   |                             |                       |                             |
|--|-------------------------------|----------------------------|--------------------------|----------------------------|---|-----------------------------|-----------------------|-----------------------------|
| Scope  | Sites of Community Importance |                            |                          |                            | Special Protection Areas for Wild Birds |                             |                       |                             |
|  | Number of SCIs                | Total surface of SCIs (ha) | Land surface of SCIs (%) | Marine surface of SCIs (%) | Number of SPABs                         | Total surface of SPABs (ha) | Land surface SPAB (%) | Marine surface of SPABs (%) |
| Aragón   | 156                           | 1,046,700.9                | 100.0                    | 0.0                        | 45.0                                    | 848,543.4                   | 100.0                 | 0.0                         |
| Spain  | 1,466                         | 15,777,555.2               | 74.4                     | 25.6                       | 643.0                                   | 15,318,654.4                | 66.1                  | 33.9                        |
| In hectares and percentages (percentages have been calculated over the total surface of each figure) |                               |                            |                          |                            |   |                             |                       |                             |
| Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)                          |                               |                            |                          |                            |   |                             |                       |                             |



| AGRICULTURE. ORGANIC FARMING AND IRRIGATION SURFACES (% OF SURFACE AND NUMBER OF OPERATORS IN FARMING) |  |  |   |
|--|--|--|---|
| Scope  | Percentage of irrigation surface with respect to utilised agricultural area (2014) | Percentage of organic farmland with respect to utilised agricultural area (2013) | Organic livestock farming: Number of farms (2013) |
| Aragón   | 18.7   | 2.8  | 36  |
| Spain  | 14.4   | 6.3  | 5,808   |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| WASTE. HOUSEHOLD WASTE PER INHABITANT (kg/inhab.) |       |       |       |       |                      |
|---|-------|-------|-------|-------|----------------------|
| Scope   | 2005  | 2010  | 2011  | 2012  | 2005-2012 Change (%) |
| Aragón  | 486   | 375.8 | 374.4 | 353   | -27.4                |
| Spain   | 502.8 | 421.7 | 406.8 | 396.5 | -21.1                |

Source: INE

| WATER. AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day) |      |      |      |      |      |      |      |      |                      |
|---|------|------|------|------|------|------|------|------|----------------------|
| Scope   | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2005-2012 Change (%) |
| Aragón  | 156  | 152  | 143  | 150  | 148  | 144  | 132  | 138  | -11.5                |
| Spain   | 170  | 164  | 157  | 154  | 149  | 144  | 142  | 137  | -19.4                |

Source: INE

| AIR. AVERAGE ANNUAL CONCENTRATION IN URBAN AREAS WITH OVER 50,000 INHABITANTS. |                                 |                           |                  |                           |            |
|--|---------------------------------|---------------------------|------------------|---------------------------|------------|
| SCOPE  | AVERAGE IN ARAGÓN               |                           | AVERAGE IN SPAIN |                           |            |
|  | POLLUTING AGENT / CHANGE PERIOD | 2013 (µg/m <sup>3</sup> ) | Change (%)       | 2013 (µg/m <sup>3</sup> ) | Change (%) |
| NO <sub>2</sub> (2001-2013 CHANGE)   |                                 | 25.5                      | -58.9            | 22.9                      | -35.2      |
| PM10 (2001-2013 CHANGE)  |                                 | 15.8                      | -54.1            | 20.9                      | -44.8      |
| PM2.5 (2010-2013 CHANGE)   |                                 | 12.0                      | -11.1            | 11.3                      | -10.1      |
| O <sub>3</sub> Daily eight-hour maximum values (2005-2013 CHANGE)              |                                 | 69.8                      | 83.6             | 75.6                      | 15.3       |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| ENERGY. ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab.) |       |       |       |       |       |                      |
|--|-------|-------|-------|-------|-------|----------------------|
| Scope  | 2010  | 2011  | 2012  | 2013  | 2014  | 2010-2014 Change (%) |
| Aragón   | 7.852 | 7.727 | 7.519 | 7.381 | 7.435 | -5.3                 |
| Spain  | 5.863 | 5.735 | 5.652 | 5.540 | 5.519 | -5.9                 |

Source: data compiled by the authors from the REE and INE data

## Environmental reports

[http://www.aragones/DepartamentosOrganismosPublicos/Departamentos/AgriculturaGanaderiaMedioAmbiente/AreasTematicas/MA\\_InformacionDAtosAmbientales/ci02\\_InformesMA.detalleDepartamento?channelSelected=de0890292fb3a210VgnVCM100000450a15acRCRD](http://www.aragones/DepartamentosOrganismosPublicos/Departamentos/AgriculturaGanaderiaMedioAmbiente/AreasTematicas/MA_InformacionDAtosAmbientales/ci02_InformesMA.detalleDepartamento?channelSelected=de0890292fb3a210VgnVCM100000450a15acRCRD)

## Links to websites of interest on the environment

- Environmental information and data of Aragón:  
[http://www.aragones/DepartamentosOrganismosPublicos/Departamentos/AgriculturaGanaderiaMedioAmbiente/AreasTematicas/MA\\_InformacionDAtosAmbientales?channelSelected=de0890292fb3a210VgnVCM100000450a15acRCRD](http://www.aragones/DepartamentosOrganismosPublicos/Departamentos/AgriculturaGanaderiaMedioAmbiente/AreasTematicas/MA_InformacionDAtosAmbientales?channelSelected=de0890292fb3a210VgnVCM100000450a15acRCRD)
- Agri-Environmental Electronic Gazette:  
[http://www.aragones/DepartamentosOrganismosPublicos/Departamentos/AgriculturaGanaderiaMedioAmbiente/AreasGenericas/Publicaciones/ci40\\_Boletin\\_electronico\\_AgroambientaldetalleDepartamento?channelSelected=0](http://www.aragones/DepartamentosOrganismosPublicos/Departamentos/AgriculturaGanaderiaMedioAmbiente/AreasGenericas/Publicaciones/ci40_Boletin_electronico_AgroambientaldetalleDepartamento?channelSelected=0)
- "Surcos al Natural" Journal:  
[http://www.aragones/DepartamentosOrganismosPublicos/Departamentos/AgriculturaGanaderiaMedioAmbiente/AreasGenericas/Publicaciones/ci03\\_Revista\\_SURCOS\\_AL\\_NATURAL\\_detalleDepartamento](http://www.aragones/DepartamentosOrganismosPublicos/Departamentos/AgriculturaGanaderiaMedioAmbiente/AreasGenericas/Publicaciones/ci03_Revista_SURCOS_AL_NATURAL_detalleDepartamento)

## Relevant data or information

- Decree 167/2014, of 21 October, of the Government of Aragón, passing the Master Plan for Use and Management of the Natural Park of Valles Occidentales
- Decree 168/2014, of 21 October, of the Government of Aragón, passing the Master Plan for Use and Management of the Natural Park of Posets-Maladeta
- Decree 177/2014, of 4 November, of the Government of Aragón, passing the Master Plan for Use and Management of the Natural Park of Moncayo
- Decree 187/2014, of 18 November, of the Government of Aragón, passing the Protection Plan for the Protected Landscape of Pinares de Rodeno
- Decree 188/2014, of 18 November, of the Government of Aragón, passing the Protection Plan for the Protected Landscape of San Juan de la Peña and Monte Oroel
- Act 3/2014, of 29 May, amending Act 15/2006, of 28 December, on the Mountains of Aragón
- Act 6/2014, of 26 June, amending Act 6/1998, of 19 December, on the Protected Natural Spaces of Aragón
- Act 8/2014, of 23 October, amending Act 4/2009, of 22 June, on the Land Planning of Aragón
- Act 10/2014, of 27 November, on the water streams and rivers of Aragón
- Act 11/2014, of 4 December, on environmental prevention and protection of Aragón
- Decree 202/2014, of 2 December, of the Government of Aragón, passing the Land Planning Strategy of Aragón
- Decree 215/2014, of 16 December, of the Government of Aragón, granting powers to the citizens for the execution of their rights to access public information within the administration of the autonomous community of Aragón and its public sector



## ASTURIAS

### Basic geographic and administrative information

**Statute of Autonomy:** Organic Act 7/81, of 30 December (BOE [Spanish State Gazette] 9, 11 January 1982)

**Area:** 10,602 km<sup>2</sup>

**Average coastline length:** 403 km (5.0% of the total)

**Capital:** Oviedo **Provinces:** 1 **Municipalities:** 78

**Population (2014):** 1,061,756 inhab.

**Population density (2014):** 100.1 inhab./km<sup>2</sup>

**Change in No. of inhabitants (%) 2000-2014:** -1.4 / **2013-2014:** -0.6



### Basic socio-economic information

| POPULATION BY SIZE OF MUNICIPALITY (%). YEAR 2014 |          |                |                 |                  |
|---|----------|----------------|-----------------|------------------|
| SCOPE   | < 10,000 | 10,001-100,000 | 100,001-500,000 | > 500,000 inhab. |
| Asturias  | 13.1     | 39.8           | 47.0            | 0.0              |
| Spain   | 20.9     | 39.6           | 23.6            | 16.0             |

| GDP PER CAPITA AT MARKET PRICES. YEAR 2014 (1 <sup>st</sup> EST.) |          |           |                      |
|---|----------|-----------|----------------------|
| SCOPE   | €/inhab. | Spain=100 | 2013-2014 Change (%) |
| Asturias  | 20,334   | 89.3      | 1.5                  |
| Spain   | 22,780   | 100       | 1.2                  |

| EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|--|-------------|----------|--------------|----------|
| SCOPE                                      | Agriculture | Industry | Construction | Services |
| Asturias                                   | 4.2         | 15.9     | 5.4          | 74.5     |
| Spain                                      | 4.2         | 13.7     | 5.7          | 76.3     |

| GVA SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|-------------------------------------|-------------|----------|--------------|----------|
| SCOPE                               | Agriculture | Industry | Construction | Services |
| Asturias                            | 1.4         | 21.5     | 6.5          | 70.6     |
| Spain                               | 2.5         | 17.5     | 5.6          | 74.4     |

| UNEMPLOYMENT RATE |      |      |      |      |      |      |      |
|-------------------|------|------|------|------|------|------|------|
| 2007              | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| 8.4               | 8.5  | 13.4 | 15.9 | 17.8 | 21.8 | 24.1 | 21.1 |

Average in Spain in 2014: 24.4

| GROSS DISPOSABLE HOUSEHOLD INCOME (2012) |          |           |                      |
|--|----------|-----------|----------------------|
| SCOPE                                    | €/inhab. | Spain=100 | Change 2011-2012 (%) |
| Asturias                                 | 14,737   | 102.2     | -3.0                 |
| Spain                                    | 14,414   | 100       | -3.1                 |

Source: INE (for all variables)

### Basic information on the status of the environment

| LAND. LAND DISTRIBUTION IN % (2013) |               |                    |                      |   |                 |       |
|-------------------------------------|---------------|--------------------|----------------------|---|-----------------|-------|
| Scope                               | Water surface | Artificial surface | Agricultural surface | Forest land and other semi-natural areas (excluding wetlands) | Wetland surface | Total |
| Asturias                            | 0.3           | 2.3                | 24.8                 | 72.6  | 0.0             | 100.0 |
| Spain                               | 0.8           | 2.5                | 41.9                 | 54.6  | 0.2             | 100.0 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| NATURE. PROTECTED LAND AREA (2014) |                      |      |             |      |                     |      |                                  |           |          |
|------------------------------------|----------------------|------|-------------|------|---------------------|------|----------------------------------|-----------|----------|
| Scope                              | Total protected area |      | PA          |      | Natura 2000 Network |      | Other international figures (ha) |           |          |
|                                    | ha                   | %    | ha          | %    | ha                  | %    | MAB                              | RAMSAR    | SPAMI    |
| Asturias                           | 350,460.5            | 33.0 | 233,567.9   | 22.0 | 285,257.4           | 26.9 | 244,725.0                        | 2,214.3   | 0.0      |
| Spain                              | 16,145,136.6         | 31.9 | 6,316,313.9 | 12.5 | 13,783,612.5        | 27.2 | 4,791,679.0                      | 281,220.5 | 51,857.9 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| NATURE. NUMBER AND AREA OF PROTECTED SPACES IN THE NATURA 2000 NETWORK: SCIs AND SPABs (2014): |                               |                            |                          |                            |   |                             |                       |                             |
|--|-------------------------------|----------------------------|--------------------------|----------------------------|---|-----------------------------|-----------------------|-----------------------------|
| Scope  | Sites of Community Importance |                            |                          |                            | Special Protection Areas for Wild Birds |                             |                       |                             |
|  | Number of SCIs                | Total surface of SCIs (ha) | Land surface of SCIs (%) | Marine surface of SCIs (%) | Number of SPABs                         | Total surface of SPABs (ha) | Land surface SPAB (%) | Marine surface of SPABs (%) |
| Asturias   | 49                            | 304,634.2                  | 93.5                     | 6.5                        | 13.0                                    | 239,659.8                   | 93.1                  | 6.9                         |
| Spain  | 1,466                         | 15,777,555.2               | 74.4                     | 25.6                       | 643.0                                   | 15,318,654.4                | 66.1                  | 33.9                        |

In hectares and percentages (percentages have been calculated over the total surface of each figure)

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| AGRICULTURE. ORGANIC FARMING AND IRRIGATION SURFACES (% OF SURFACE AND NUMBER OF OPERATORS IN FARMING) |  |  |   |
|--|--|--|---|
| Scope  | Percentage of irrigation surface with respect to utilised agricultural area (2014) | Percentage of organic farmland with respect to utilised agricultural area (2013) | Organic livestock farming: Number of farms (2013) |
| Asturias   | 0.4  | 5.2  | 328   |
| Spain  | 14.4   | 6.3  | 5,808   |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| WASTE. HOUSEHOLD WASTE PER INHABITANT (kg/inhab.) |       |       |       |       |                      |
|---|-------|-------|-------|-------|----------------------|
| Scope   | 2005  | 2010  | 2011  | 2012  | 2005-2012 Change (%) |
| Asturias  | 461.6 | 426   | 411.9 | 383.3 | -17.0                |
| Spain   | 502.8 | 421.7 | 406.8 | 396.5 | -21.1                |

Source: INE

| WATER. AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day) |      |      |      |      |      |      |      |      |                      |
|---|------|------|------|------|------|------|------|------|----------------------|
| Scope   | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2005-2012 Change (%) |
| Asturias  | 183  | 188  | 185  | 177  | 165  | 159  | 153  | 130  | -29.0                |
| Spain   | 170  | 164  | 157  | 154  | 149  | 144  | 142  | 137  | -19.4                |

Source: INE

| AIR. AVERAGE ANNUAL CONCENTRATION IN URBAN AREAS WITH OVER 50,000 INHABITANTS. |                                 |                                   |                  |                                   |            |
|--|---------------------------------|-----------------------------------|------------------|-----------------------------------|------------|
| SCOPE  | AVERAGE IN ASTURIAS             |                                   | AVERAGE IN SPAIN |                                   |            |
|  | POLLUTING AGENT / CHANGE PERIOD | 2013 ( $\mu\text{g}/\text{m}^3$ ) | Change (%)       | 2013 ( $\mu\text{g}/\text{m}^3$ ) | Change (%) |
| NO <sub>2</sub> (2001-2013 CHANGE)   |                                 | 25.6                              | -23.8            | 22.9                              | -35.2      |
| PM10 (2001-2013 CHANGE)  |                                 | 27.6                              | -59.5            | 20.9                              | -44.8      |
| PM2.5 (2010-2013 CHANGE)   |                                 | 11.6                              | 0.6              | 11.3                              | -10.1      |
| O <sub>3</sub> Daily eight-hour maximum values (2005-2013 CHANGE)              |                                 | 60.6                              | -3.2             | 75.6                              | 15.3       |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| ENERGY. ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab.) |       |        |       |       |       |                      |
|--|-------|--------|-------|-------|-------|----------------------|
| Scope  | 2010  | 2011   | 2012  | 2013  | 2014  | 2010-2014 Change (%) |
| Asturias   | 9.947 | 10.134 | 9.609 | 9.773 | 9.740 | -2.1                 |
| Spain  | 5.863 | 5.735  | 5.652 | 5.540 | 5.519 | -5.9                 |

Source: data compiled by the authors from the REE and INE data

## Environmental reports

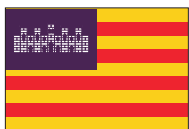
- 2013 Environmental Profile of Asturias

## Links to websites of interest on the environment

- [Environmental Network of Asturias: Air Quality](#)
  - Automatic air quality network managed by the Regional Government of Asturias
  - Current status of air quality in Asturias
  - Automatic network for atmospheric pollution stations managed by the companies
- Consorcio para la Gestión de los Residuos Sólidos en Asturias (COGERSA): [www.cogersa.es](http://www.cogersa.es)
- Consorcio de Aguas de Asturias: [www.consorcioaa.com](http://www.consorcioaa.com)

## Relevant data or information

- Plan for the improvement of air quality in the urban area of Gijón: [https://www.asturias.es/medioambiente/articulos/ficheros/PLAN\\_MEJORA\\_CALIDAD\\_DEL\\_AIRE\\_GUON.pdf](https://www.asturias.es/medioambiente/articulos/ficheros/PLAN_MEJORA_CALIDAD_DEL_AIRE_GUON.pdf)
- Plan for the improvement of air quality in the area of "Asturias Central": [https://www.asturias.es/medioambiente/articulos/ficheros/Plan\\_definitivo\\_y\\_anexos.pdf](https://www.asturias.es/medioambiente/articulos/ficheros/Plan_definitivo_y_anexos.pdf)
- In December 2014, a total of 41 Instruments of Integrated Management of several protected spaces in Asturias were passed.
- A 2014-2017 Environmental Inspection Plan for Asturias was prepared.
- The competencies in this field were assumed with the passing of Decree 54/2014, of 21 May, appointing a competent body for the application of the organic labelling system in the European Union within Asturias.
- In 2014, a Technical Instruction was published for the assessment and determination of the acoustic impact of industrial installations in Asturias.
- By virtue of Resolution of 20 March 2014, the General Levels of Reference for metal agents in the ground in Asturias were passed.
- The annual investment in environmental education, particularly with regard to waste, is approximately of one million Euros.



## BALEARIC ISLANDS

### Basic geographic and administrative information

**Statute of Autonomy:** Organic Act 2/83, of 25 February (BOE [Spanish State Gazette] 51, of 1 March 1983), as drafted by Organic Act 1/2007, of 28 February (BOE [Spanish State Gazette] 52, of 1 March 2007)

**Area:** 4,992 km<sup>2</sup>

**Average coastline length:** 1,428 km (176% of the total)

**Capital:** Palma de Mallorca **Provinces:** 1 **Municipalities:** 67

**Population (2014):** 1,103,442 inhab.

**Population density (2014):** 221.0 inhab./km<sup>2</sup>

**Change in No. of inhabitants (%) 2000-2014:** 30.5 / **2013-2014:** -0.7

### Basic socio-economic information

| POPULATION BY SIZE OF MUNICIPALITY (%). YEAR 2014 |          |                |                 |                  |
|---|----------|----------------|-----------------|------------------|
| SCOPE   | < 10,000 | 10,001-100,000 | 100,001-500,000 | > 500,000 inhab. |
| Balearic Islands                                  | 15.6     | 48.2           | 36.2            | 0.0              |
| Spain   | 20.9     | 39.6           | 23.6            | 16.0             |

| EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|--|-------------|----------|--------------|----------|
| SCOPE                                      | Agriculture | Industry | Construction | Services |
| Balearic Islands                           | 1.1         | 6.6      | 8.5          | 83.8     |
| Spain                                      | 4.2         | 13.7     | 5.7          | 76.3     |

| UNEMPLOYMENT RATE              |      |      |      |      |      |      |      |  |
|--------------------------------|------|------|------|------|------|------|------|--|
| 2007                           | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |  |
| 7.2                            | 10.2 | 17.9 | 20.1 | 21.9 | 23.2 | 22.3 | 20.0 |  |
| Average in Spain in 2014: 24.4 |      |      |      |      |      |      |      |  |



| GDP PER CAPITA AT MARKET PRICES. YEAR 2014 (1 <sup>st</sup> EST.) |          |           |                      |
|---|----------|-----------|----------------------|
| SCOPE   | €/inhab. | Spain=100 | 2013-2014 Change (%) |
| Balearic Islands  | 23,931   | 105.1     | 1.3                  |
| Spain   | 22,780   | 100       | 1.2                  |

| GVA SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|-------------------------------------|-------------|----------|--------------|----------|
| SCOPE                               | Agriculture | Industry | Construction | Services |
| Balearic Islands                    | 0.4         | 7.4      | 5.7          | 86.4     |
| Spain                               | 2.5         | 17.5     | 5.6          | 74.4     |

| GROSS DISPOSABLE HOUSEHOLD INCOME (2012) |          |           |                      |
|--|----------|-----------|----------------------|
| SCOPE                                    | €/inhab. | Spain=100 | Change 2011-2012 (%) |
| Balearic Islands                         | 14,979   | 103.9     | -2.9                 |
| Spain                                    | 14,414   | 100       | -3.1                 |

Source: INE (for all variables)

### Basic information on the status of the environment

| LAND. LAND DISTRIBUTION IN % (2013) |               |                    |                      |   |                 |       |
|-------------------------------------|---------------|--------------------|----------------------|---|-----------------|-------|
| Scope                               | Water surface | Artificial surface | Agricultural surface | Forest land and other semi-natural areas (excluding wetlands) | Wetland surface | Total |
| Balearic Islands                    | 0.2           | 6.9                | 48.6                 | 43.7  | 0.6             | 100.0 |
| Spain                               | 0.8           | 2.5                | 41.9                 | 54.6  | 0.2             | 100.0 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| NATURE. PROTECTED LAND AREA (2014) |                      |      |             |      |                     |      |                                  |           |          |
|------------------------------------|----------------------|------|-------------|------|---------------------|------|----------------------------------|-----------|----------|
| Scope                              | Total protected area |      | PA          |      | Natura 2000 Network |      | Other international figures (ha) |           |          |
|                                    | ha                   | %    | ha          | %    | ha                  | %    | MAB                              | RAMSAR    | SPAMI    |
| Balearic Islands                   | 178,437.5            | 35.6 | 74,709.4    | 14.9 | 115,479.7           | 23.0 | 70,087.9                         | 3,169.4   | 1,315.1  |
| Spain                              | 16,145,136.6         | 31.9 | 6,316,313.9 | 12.5 | 13,783,612.5        | 27.2 | 4,791,679.0                      | 281,220.5 | 51,857.9 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| NATURE. NUMBER AND AREA OF PROTECTED SPACES IN THE NATURA 2000 NETWORK: SCIs AND SPABs (2014): |                               |                            |                          |                            |   |                             |                       |                             |
|--|-------------------------------|----------------------------|--------------------------|----------------------------|---|-----------------------------|-----------------------|-----------------------------|
| Scope  | Sites of Community Importance |                            |                          |                            | Special Protection Areas for Wild Birds |                             |                       |                             |
|  | Number of SCIs                | Total surface of SCIs (ha) | Land surface of SCIs (%) | Marine surface of SCIs (%) | Number of SPABs                         | Total surface of SPABs (ha) | Land surface SPAB (%) | Marine surface of SPABs (%) |
| Balearic Islands   | 138                           | 202,750.3                  | 47.5                     | 52.5                       | 55.0                                    | 139,415.7                   | 63.3                  | 36.7                        |
| Spain  | 1,466                         | 15,777,555.2               | 74.4                     | 25.6                       | 643.0                                   | 15,318,654.4                | 66.1                  | 33.9                        |

In hectares and percentages (percentages have been calculated over the total surface of each figure) Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| AGRICULTURE. ORGANIC FARMING AND IRRIGATION SURFACES (% OF SURFACE AND NUMBER OF OPERATORS IN FARMING) |  |  |   |
|--|--|--|---|
| Scope  | Percentage of irrigation surface with respect to utilised agricultural area (2014) | Percentage of organic farmland with respect to utilised agricultural area (2013) | Organic livestock farming: Number of farms (2013) |
| Balearic Islands   | 10.1   | 13.4   | 315   |
| Spain  | 14.4   | 6.3  | 5,808   |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| WASTE. HOUSEHOLD WASTE PER INHABITANT (kg/inhab.) |       |       |       |       |                      |
|---|-------|-------|-------|-------|----------------------|
| Scope   | 2005  | 2010  | 2011  | 2012  | 2005-2012 Change (%) |
| Balearic Islands                                  | 643.8 | 645.9 | 679.3 | 603   | -6.3                 |
| Spain   | 502.8 | 421.7 | 406.8 | 396.5 | -21.1                |

Source: INE

| WATER. AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day) |      |      |      |      |      |      |      |      |                      |
|---|------|------|------|------|------|------|------|------|----------------------|
| Scope   | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2005-2012 Change (%) |
| Balearic Islands  | 143  | 153  | 136  | 139  | 127  | 121  | 124  | 133  | -7.0                 |
| Spain   | 170  | 164  | 157  | 154  | 149  | 144  | 142  | 137  | -19.4                |

Source: INE

| AIR. AVERAGE ANNUAL CONCENTRATION IN URBAN AREAS WITH OVER 50,000 INHABITANTS. |                                 |                           |                  |                           |            |
|--|---------------------------------|---------------------------|------------------|---------------------------|------------|
| SCOPE  | AVERAGE IN THE BALEARIC ISLANDS |                           | AVERAGE IN SPAIN |                           |            |
|  | POLLUTING AGENT / CHANGE PERIOD | 2013 (µg/m <sup>3</sup> ) | Change (%)       | 2013 (µg/m <sup>3</sup> ) | Change (%) |
| NO <sub>2</sub> (2001-2013 CHANGE)   |                                 | 16.4                      | -47.2            | 22.9                      | -35.2      |
| PM10 (2001-2013 CHANGE)  |                                 | 19.0                      | -36.7            | 20.9                      | -44.8      |
| PM2.5 (2010-2013 CHANGE)   |                                 | 12.0                      | -7.7             | 11.3                      | -10.1      |
| O <sub>3</sub> Daily eight-hour maximum values (2005-2013 CHANGE)              |                                 | 79.5                      | 31.4             | 75.6                      | 15.3       |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| ENERGY. ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab.) |       |       |       |       |       |                      |
|--|-------|-------|-------|-------|-------|----------------------|
| Scope  | 2010  | 2011  | 2012  | 2013  | 2014  | 2010-2014 Change (%) |
| Balearic Islands   | 5.280 | 5.160 | 5.201 | 5.104 | 5.062 | -4.1                 |
| Spain  | 5.863 | 5.735 | 5.652 | 5.540 | 5.519 | -5.9                 |

Source: data compiled by the authors from the REE and INE data

## Environmental reports

- 2008-2011 Environmental Status Report, complete document
- 2012-2013 Environmental Status Report, situation report

## Links to websites of interest on the environment

- [www.caib.es](http://www.caib.es) (Government of the Balearic Islands)
- <http://mediambient.caib.es/dgccc/estatmediambient> (Environmental Status Reports)
- [www.deibes](http://www.deibes) (spacial data of the Balearic Islands)
- [www.conselldeimallorca.net](http://www.conselldeimallorca.net) (Consell de Mallorca)
- [www.conselldeivissaes](http://www.conselldeivissaes) (Consell Insular de Eivissa)
- [www.cimees](http://www.cimees) (Consell Insular de Menorca)
- [www.consellinsulardeformentera.cat](http://www.consellinsulardeformentera.cat) (Consell Insular de Formentera)

## Relevant data or information

- Framework Agreement on Biodiversity and Partnership Agreement for the Reforestation of the Public Land of Sa Duaia, with Red Eléctrica Española - 4.484 anchoring of buoys installed in SCIs.
- The Bonelli's eagle breeds for the first time in Majorca thanks to the Species Reintroduction Plan
- The 2013-2020 Action Plan for the mitigation of climate change in the Balearic Islands, expecting to reduce greenhouse gas emissions by 23.6% in 2020, was passed
- Approval was also granted to the Recovery Plan for the cluster pine (*Pinus pinaster*), the Preservation Plan for the Socarrell Bord de Menorca (*Femeniasia balearica*), and the Recovery Plan for the Long-Fingered Bat (*Myotis capaccinii*) and for the Conservation of Cave Dwelling Chiroptera in the Balearic Islands, known as Plan Balcells.
- The shoreline cleanup service has removed 47 tonnes of waste this summer, 23% more than 2013
- Experimental project for a cleanup of waterstream shorelines with equine animal species (Directorate General of Water Resources and Fundación Naturaleza Parque). Commencement of the participation process for the revision of the Hygrological Plan of the Balearic Islands
- The Ministry of Agriculture, Food and the Environment has published an Order establishing protected fishing areas on certain underwater mountains in the Canal de Mallorca (40,000 ha). These are the underwater mountains of "Emile Baudot" and "Ausias March", and to the East of the National Park of Archipiélago de Cabrera, in the area known as Fort d'en Moreu
- The Regional Parliament of the Balearic Islands has passed the Act on land planning and use in the Balearic Islands
- The Regional Government passed the Draft Bill on land transport and mobility in the Balearic Islands
- Royal Decree 413/2014, of 6 June, regulating the electric power production activity from renewable, cogeneration and waste power sources.



## CANARY ISLANDS

### Basic geographic and administrative information

**Statute of Autonomy:** Organic Act 10/82, of 10 August (BOE [Spanish State Gazette] 195, 16 August 1982)

**Area:** 7,447 km<sup>2</sup>

**Average coastline length:** 1,583 km (19.5% of the total)

**Capital:** Las Palmas de Gran Canaria and Santa Cruz de Tenerife

**Provinces:** 2 **Municipalities:** 88

**Population (2014):** 2,104,815 inhab.

**Population density (2014):** 282.6 inhab./km<sup>2</sup>

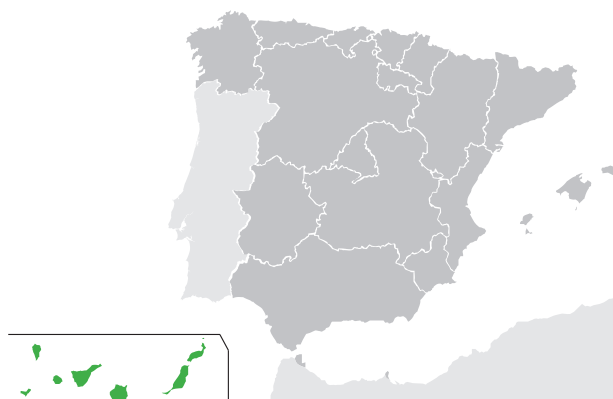
**Change in No. of inhabitants (%) 2000-2014:** 22.6 / **2013-2014:** -0.7

### Basic socio-economic information

| POPULATION BY SIZE OF MUNICIPALITY (%). YEAR 2014 |          |                |                 |                  |
|---|----------|----------------|-----------------|------------------|
| SCOPE   | < 10,000 | 10,001-100,000 | 100,001-500,000 | > 500,000 inhab. |
| Canary Islands                                    | 10.2     | 49.7           | 40.0            | 0.0              |
| Spain   | 20.9     | 39.6           | 23.6            | 16.0             |

| EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|--|-------------|----------|--------------|----------|
| SCOPE                                      | Agriculture | Industry | Construction | Services |
| Canary Islands                             | 3.4         | 4.7      | 5.0          | 87.0     |
| Spain                                      | 4.2         | 13.7     | 5.7          | 76.3     |

| UNEMPLOYMENT RATE              |      |      |      |      |      |      |      |
|--------------------------------|------|------|------|------|------|------|------|
| 2007                           | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| 10.5                           | 17.3 | 26.0 | 28.6 | 29.3 | 32.6 | 33.7 | 32.4 |
| Average in Spain in 2014: 24.4 |      |      |      |      |      |      |      |



| GDP PER CAPITA AT MARKET PRICES. YEAR 2014 (1 <sup>st</sup> EST.) |          |           |                      |
|---|----------|-----------|----------------------|
| SCOPE   | €/inhab. | Spain=100 | 2013-2014 Change (%) |
| Canary Islands  | 19,581   | 86.0      | 1.4                  |
| Spain   | 22,780   | 100       | 1.2                  |

| GVA SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|-------------------------------------|-------------|----------|--------------|----------|
| SCOPE                               | Agriculture | Industry | Construction | Services |
| Canary Islands                      | 1.6         | 8.7      | 4.7          | 85.0     |
| Spain                               | 2.5         | 17.5     | 5.6          | 74.4     |

| GROSS DISPOSABLE HOUSEHOLD INCOME (2012) |          |           |                      |
|--|----------|-----------|----------------------|
| SCOPE                                    | €/inhab. | Spain=100 | Change 2011-2012 (%) |
| Canary Islands                           | 12,348   | 85.7      | -4.1                 |
| Spain                                    | 14,414   | 100       | -3.1                 |

Source: INE (for all variables)

### Basic information on the status of the environment

| LAND. LAND DISTRIBUTION IN % (2013) |               |                    |                      |   |                 |       |
|-------------------------------------|---------------|--------------------|----------------------|---|-----------------|-------|
| Scope                               | Water surface | Artificial surface | Agricultural surface | Forest land and other semi-natural areas (excluding wetlands) | Wetland surface | Total |
| Canary Islands                      | 0.2           | 5.2                | 18.5                 | 76.1  | 0.00            | 100.0 |
| Spain                               | 0.8           | 2.5                | 41.9                 | 54.6  | 0.2             | 100.0 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| NATURE. PROTECTED LAND AREA (2014) |                      |      |             |      |                     |      |                                  |           |          |
|------------------------------------|----------------------|------|-------------|------|---------------------|------|----------------------------------|-----------|----------|
| Scope                              | Total protected area |      | PA          |      | Natura 2000 Network |      | Other international figures (ha) |           |          |
|                                    | ha                   | %    | ha          | %    | ha                  | %    | MAB                              | RAMSAR    | SPAMI    |
| Canary Islands                     | 573,179.0            | 77.0 | 302,133.1   | 40.6 | 348,003.3           | 46.7 | 450,929.8                        | 95.2      | 0.0      |
| Spain                              | 16,145,136.6         | 31.9 | 6,316,313.9 | 12.5 | 13,783,612.5        | 27.2 | 4,791,679.0                      | 281,220.5 | 51,857.9 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| NATURE. NUMBER AND AREA OF PROTECTED SPACES IN THE NATURA 2000 NETWORK: SCIs AND SPABs (2014): |                               |                            |                          |                            |   |                             |                       |                             |
|--|-------------------------------|----------------------------|--------------------------|----------------------------|---|-----------------------------|-----------------------|-----------------------------|
| Scope  | Sites of Community Importance |                            |                          |                            | Special Protection Areas for Wild Birds |                             |                       |                             |
|  | Number of SCIs                | Total surface of SCIs (ha) | Land surface of SCIs (%) | Marine surface of SCIs (%) | Number of SPABs                         | Total surface of SPABs (ha) | Land surface SPAB (%) | Marine surface of SPABs (%) |
| Canary Islands   | 153                           | 290,539.3                  | 97.5                     | 2.5                        | 43.0                                    | 277,285.4                   | 97.8                  | 2.2                         |
| Spain  | 1,466                         | 15,777,555.2               | 74.4                     | 25.6                       | 643.0                                   | 15,318,654.4                | 66.1                  | 33.9                        |

In hectares and percentages (percentages have been calculated over the total surface of each figure) Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| AGRICULTURE. ORGANIC FARMING AND IRRIGATION SURFACES (% OF SURFACE AND NUMBER OF OPERATORS IN FARMING) |  |  |   |
|--|--|--|---|
| Scope  | Percentage of irrigation surface with respect to utilised agricultural area (2014) | Percentage of organic farmland with respect to utilised agricultural area (2013) | Organic livestock farming: Number of farms (2013) |
| Canary Islands   | 14.0   | 3.6  | 120   |
| Spain  | 14.4   | 6.3  | 5,808   |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| WASTE. HOUSEHOLD WASTE PER INHABITANT (kg/inhab.) |       |       |       |       |                      |
|---|-------|-------|-------|-------|----------------------|
| Scope   | 2005  | 2010  | 2011  | 2012  | 2005-2012 Change (%) |
| Canary Islands                                    | 612.7 | 599.1 | 562.5 | 549.7 | -10.3                |
| Spain   | 502.8 | 421.7 | 406.8 | 396.5 | -21.1                |

Source: INE

| WATER. AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day) |      |      |      |      |      |      |      |      |                      |
|---|------|------|------|------|------|------|------|------|----------------------|
| Scope   | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2005-2012 Change (%) |
| Canary Islands  | 150  | 144  | 154  | 157  | 141  | 149  | 150  | 149  | -0.7                 |
| Spain   | 170  | 164  | 157  | 154  | 149  | 144  | 142  | 137  | -19.4                |

Source: INE

| AIR. AVERAGE ANNUAL CONCENTRATION IN URBAN AREAS WITH OVER 50,000 INHABITANTS. |                                 |                           |                  |                           |            |
|--|---------------------------------|---------------------------|------------------|---------------------------|------------|
| SCOPE  | AVERAGE IN THE CANARY ISLANDS   |                           | AVERAGE IN SPAIN |                           |            |
|  | POLLUTING AGENT / CHANGE PERIOD | 2013 (µg/m <sup>3</sup> ) | Change (%)       | 2013 (µg/m <sup>3</sup> ) | Change (%) |
| NO <sub>2</sub> (2001-2013 CHANGE)   |                                 | 13.6                      | -59.6            | 22.9                      | -35.2      |
| PM10 (2001-2013 CHANGE)  |                                 | 23.1                      | -46.9            | 20.9                      | -44.8      |
| PM2.5 (2010-2013 CHANGE)   |                                 | 8.3                       | -1.6             | 11.3                      | -10.1      |
| O <sub>3</sub> Daily eight-hour maximum values (2005-2013 CHANGE)              |                                 | 74.6                      | 50.7             | 75.6                      | 15.3       |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| ENERGY. ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab.) |       |       |       |       |       |                      |
|--|-------|-------|-------|-------|-------|----------------------|
| Scope  | 2010  | 2011  | 2012  | 2013  | 2014  | 2010-2014 Change (%) |
| Canary Islands   | 4.199 | 4.170 | 4.198 | 4.070 | 4.076 | -2.9                 |
| Spain  | 5.863 | 5.735 | 5.652 | 5.540 | 5.519 | -5.9                 |

Source: data compiled by the authors from the REE and INE data

## Environmental reports

The Environment in the Canary Islands. Environmental Situation Reports. <http://www.gobiernodecanarias.org/medioambiente/piac/temas/participacion-informacion-publica/simac/informes-coyuntura-ambiental/>

## Links to websites of interest on the environment

- Environmental Information Portal of the Canary Islands. <http://www.gobiernodecanarias.org/medioambiente/piac/>
- Air Quality Data in the Canary Islands. <http://www.gobiernodecanarias.org/medioambiente/calidaddelaire/>
- Biodiversity Blog. <http://www3.gobiernodecanarias.org/medusa/lecoescuela/biodiversidad/>
- Biodiversity Data Bank in the Canary Islands. <http://www.biodiversidadcanarias.es/atlas/index.jsf>
- Data Bank of Introduced Species in the Canary Islands. <http://www.interreg-bionatura.com/especies/>
- Promar Network. <http://www.redpromar.com/inicio>
- Life Lampropeltis. <http://lifelampropeltis.com/>
- National Parks of the Canary Islands. <http://www.parquesnacionalesdecanarias.es/es/index.html>
- Lanzarote Biosphere Reserve. <http://www.lanzarotebiosfera.org/>
- Fuerteventura Biosphere Reserve. <http://gestion.cabildofuertes/fuerteventurabiosfera/>
- Gran Canaria Biosphere Reserve. <http://cabildograncanaria.com/web/reserva-de-la-biosfera>
- La Gomera Biosphere Reserve. <http://www.lagomera.es/index.php/la-gomera-reserva-de-la-biosfera>
- La Palma Biosphere Reserve. <http://www.lapalmabiosfera.es/>
- El Hierro Biosphere Reserve. <http://www.elhierro.es/index.php?desktop=0008>

## Relevant data or information

- Approval of the Air Quality Plan in the urban area of Santa Cruz de Tenerife - San Cristóbal de La Laguna with sulphur dioxide. <http://www.gobiernodecanarias.org/boc/2014/08/01/011.html>
- Strategic Noise Maps of large roads in the Canary Islands, 2012. <http://www.gobiernodecanarias.org/medioambiente/piac/temas/atmosfera/medidas-y-factores/contaminacion-acustica/medidas-contaminacion-acustica/MER-2012/index.html>
- Special Areas of Conservation - Natura 2000 Network: Management Plans. <http://www.gobiernodecanarias.org/medioambiente/piac/temas/biodiversidad/medidas-y-factores/espacios-terrestres-protegidos/medidas-de-conservacion/red-natura-2000/red-natura-2000-canarias/planes-gestion-zec/>



## CANTABRIA

### Basic geographic and administrative information

**Statute of Autonomy:** Organic Act 8/1981, of 30 December, on the Statute of Autonomy of Cantabria (BOE [Spanish State Gazette] 9, 11 January 1982)

**Area:** 5,327 km<sup>2</sup>

**Average coastline length:** 291 km (3.6% of the total)

**Capital:** Santander **Provinces:** 1 **Municipalities:** 102

**Population (2014):** 588,656 inhab.

**Population density (2014):** 110.6 inhab./km<sup>2</sup>

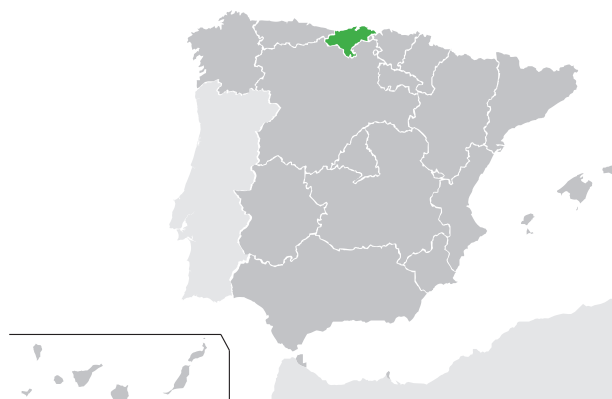
**Change in No. of inhabitants (%) 2000-2014:** 10.8 / **2013-2014:** -0.5

### Basic socio-economic information

| POPULATION BY SIZE OF MUNICIPALITY (%). YEAR 2014 |          |                |                 |                  |
|---|----------|----------------|-----------------|------------------|
| SCOPE   | < 10,000 | 10,001-100,000 | 100,001-500,000 | > 500,000 inhab. |
| Cantabria   | 35.1     | 35.1           | 29.9            | 0.0              |
| Spain   | 20.9     | 39.6           | 23.6            | 16.0             |

| EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|--|-------------|----------|--------------|----------|
| SCOPE                                      | Agriculture | Industry | Construction | Services |
| Cantabria                                  | 3.1         | 16.4     | 5.8          | 74.8     |
| Spain                                      | 4.2         | 13.7     | 5.7          | 76.3     |

| UNEMPLOYMENT RATE              |      |      |      |      |      |      |      |
|--------------------------------|------|------|------|------|------|------|------|
| 2007                           | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| 6.0                            | 7.2  | 12.0 | 13.7 | 15.3 | 17.8 | 20.4 | 19.4 |
| Average in Spain in 2014: 24.4 |      |      |      |      |      |      |      |



| GDP PER CAPITA AT MARKET PRICES. YEAR 2014 (1 <sup>st</sup> EST.) |          |           |                      |
|---|----------|-----------|----------------------|
| SCOPE   | €/inhab. | Spain=100 | 2013-2014 Change (%) |
| Cantabria   | 20,855   | 91.5      | 0.9                  |
| Spain   | 22,780   | 100       | 1.2                  |

| GVA SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|-------------------------------------|-------------|----------|--------------|----------|
| SCOPE                               | Agriculture | Industry | Construction | Services |
| Cantabria                           | 1.7         | 22.4     | 6.8          | 69.1     |
| Spain                               | 2.5         | 17.5     | 5.6          | 74.4     |

| GROSS DISPOSABLE HOUSEHOLD INCOME (2012) |          |           |                      |
|--|----------|-----------|----------------------|
| SCOPE                                    | €/inhab. | Spain=100 | Change 2011-2012 (%) |
| Cantabria                                | 13,954   | 96.8      | -4.1                 |
| Spain                                    | 14,414   | 100       | -3.1                 |

Source: INE (for all variables)

### Basic information on the status of the environment

| LAND. LAND DISTRIBUTION IN % (2013) |               |                    |                      |   |                 |       |
|-------------------------------------|---------------|--------------------|----------------------|---|-----------------|-------|
| Scope                               | Water surface | Artificial surface | Agricultural surface | Forest land and other semi-natural areas (excluding wetlands) | Wetland surface | Total |
| Cantabria                           | 1.0           | 4.0                | 26.4                 | 68.2  | 0.4             | 100.0 |
| Spain                               | 0.8           | 2.5                | 41.9                 | 54.6  | 0.2             | 100.0 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| NATURE. PROTECTED LAND AREA (2014) |                      |              |      |     |                     |              |                                  |        |          |
|------------------------------------|----------------------|--------------|------|-----|---------------------|--------------|----------------------------------|--------|----------|
| Scope                              | Total protected area |              | PA   |     | Natura 2000 Network |              | Other international figures (ha) |        |          |
|                                    | ha                   | %            | ha   | %   | ha                  | %            | MAB                              | RAMSAR | SPAMI    |
| Cantabria                          | 21                   | 137,657.0    | 98.7 | 1.3 | 8                   | 79,164.5     | 98.7                             | 1.4    | 0.0      |
| Spain                              | 1,449                | 12,742,866.7 | 23.2 | 1.0 | 598                 | 10,387,662.7 | 20.0                             | 0.3    | 51,857.9 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| NATURE. NUMBER AND AREA OF PROTECTED SPACES IN THE NATURA 2000 NETWORK: SCIs AND SPABs (2014): |                               |                            |                          |                            |   |                             |                       |                             |
|--|-------------------------------|----------------------------|--------------------------|----------------------------|---|-----------------------------|-----------------------|-----------------------------|
| Scope  | Sites of Community Importance |                            |                          |                            | Special Protection Areas for Wild Birds |                             |                       |                             |
|  | Number of SCIs                | Total surface of SCIs (ha) | Land surface of SCIs (%) | Marine surface of SCIs (%) | Number of SPABs                         | Total surface of SPABs (ha) | Land surface SPAB (%) | Marine surface of SPABs (%) |
| Cantabria  | 21                            | 137,600.8                  | 98.7                     | 1.3                        | 8.0                                     | 79,109.7                    | 98.6                  | 1.4                         |
| Spain  | 1,466                         | 15,777,555.2               | 74.4                     | 25.6                       | 643.0                                   | 15,318,654.4                | 66.1                  | 33.9                        |

In hectares and percentages (percentages have been calculated over the total surface of each figure) Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)



| AGRICULTURE. ORGANIC FARMING AND IRRIGATION SURFACES (% OF SURFACE AND NUMBER OF OPERATORS IN FARMING) |  |  |   |
|--|--|--|---|
| Scope  | Percentage of irrigation surface with respect to utilised agricultural area (2014) | Percentage of organic farmland with respect to utilised agricultural area (2013) | Organic livestock farming: Number of farms (2013) |
| Cantabria  | 0.2  | 2.1  | 134   |
| Spain  | 14.4   | 6.3  | 5,808   |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| WASTE. HOUSEHOLD WASTE PER INHABITANT (kg/inhab.) |       |       |       |       |                      |
|---|-------|-------|-------|-------|----------------------|
| Scope   | 2005  | 2010  | 2011  | 2012  | 2005-2012 Change (%) |
| Cantabria   | 554.2 | 463.9 | 473.9 | 454.6 | -18.0                |
| Spain   | 502.8 | 421.7 | 406.8 | 396.5 | -21.1                |

Source: INE

| WATER. AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day) |      |      |      |      |      |      |      |      |                      |
|---|------|------|------|------|------|------|------|------|----------------------|
| Scope   | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2005-2012 Change (%) |
| Cantabria   | 195  | 205  | 189  | 188  | 180  | 173  | 161  | 155  | -20.5                |
| Spain   | 170  | 164  | 157  | 154  | 149  | 144  | 142  | 137  | -19.4                |

Source: INE

| AIR. AVERAGE ANNUAL CONCENTRATION IN URBAN AREAS WITH OVER 50,000 INHABITANTS. |                                 |                                   |                  |                                   |            |
|--|---------------------------------|-----------------------------------|------------------|-----------------------------------|------------|
| SCOPE  | AVERAGE IN CANTABRIA            |                                   | AVERAGE IN SPAIN |                                   |            |
|  | POLLUTING AGENT / CHANGE PERIOD | 2013 ( $\mu\text{g}/\text{m}^3$ ) | Change (%)       | 2013 ( $\mu\text{g}/\text{m}^3$ ) | Change (%) |
| NO <sub>2</sub> (2001-2013 CHANGE)   |                                 | 24.0                              | 0.0              | 22.9                              | -35.2      |
| PM10 (2001-2013 CHANGE)  |                                 | 21.4                              | -28.7            | 20.9                              | -44.8      |
| PM2.5 (2010-2013 CHANGE)   |                                 | 11.5                              | -4.2             | 11.3                              | -10.1      |
| O <sub>3</sub> Daily eight-hour maximum values (2005-2013 CHANGE)              |                                 | 72.5                              | 14.5             | 75.6                              | 15.3       |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| ENERGY. ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab.) |       |       |       |       |       |                      |
|--|-------|-------|-------|-------|-------|----------------------|
| Scope  | 2010  | 2011  | 2012  | 2013  | 2014  | 2010-2014 Change (%) |
| Cantabria  | 7.374 | 7.541 | 7.397 | 7.384 | 7.294 | -1.1                 |
| Spain  | 5.863 | 5.735 | 5.652 | 5.540 | 5.519 | -5.9                 |

Source: data compiled by the authors from the REE and INE data

### Links to websites of interest on the environment

- <http://www.cantabria.es>
- <http://www.medioambientecantabria.es>
- [http://www.medioambientecantabria.es/calidad\\_aire](http://www.medioambientecantabria.es/calidad_aire)
- <http://www.territoriodecantabria.es>
- <http://www.urbanismodecantabria.es>
- <http://www.cantabria.es/web/direccion-general-montes>
- <http://www.icane.es>



## CASTILLA Y LEÓN

### Basic geographic and administrative information

**Statute of Autonomy:** Organic Act 14/2007, of 30 November, on the Statute of Autonomy of Castilla y León (BOE [Spanish State Gazette] 280, 1 December 2012)

**Area:** 94,227 km<sup>2</sup>

**Capital:** Valladolid **Provinces:** 9 **Municipalities:** 2,248

**Population (2014):** 2,494,790 inhab.

**Population density (2014):** 26.5 inhab./km<sup>2</sup>

**Change in No. of inhabitants (%) 2000-2014:** 0.6 / **2013-2014:** -1.0



### Basic socio-economic information

#### POPULATION BY SIZE OF MUNICIPALITY (%). YEAR 2014

| SCOPE           | < 10,000 | 10,001-100,000 | 100,001-500,000 | > 500,000 inhab. |
|-----------------|----------|----------------|-----------------|------------------|
| Castilla y León | 44.3     | 25.2           | 30.6            | 0.0              |
| Spain           | 20.9     | 39.6           | 23.6            | 16.0             |

#### GDP PER CAPITA AT MARKET PRICES. YEAR 2014 (1<sup>st</sup> EST.)

| SCOPE           | €/inhab. | Spain=100 | 2013-2014 Change (%) |
|-----------------|----------|-----------|----------------------|
| Castilla y León | 21,727   | 95.4      | 1.6                  |
| Spain           | 22,780   | 100       | 1.2                  |

#### EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2014

| SCOPE           | Agriculture | Industry | Construction | Services |
|-----------------|-------------|----------|--------------|----------|
| Castilla y León | 7.0         | 16.2     | 6.5          | 70.3     |
| Spain           | 4.2         | 13.7     | 5.7          | 76.3     |

#### GVA SECTOR STRUCTURE (%). YEAR 2014

| SCOPE           | Agriculture | Industry | Construction | Services |
|-----------------|-------------|----------|--------------|----------|
| Castilla y León | 4.8         | 22.3     | 6.0          | 67.0     |
| Spain           | 2.5         | 17.5     | 5.6          | 74.4     |

#### UNEMPLOYMENT RATE

| 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|------|------|------|------|------|------|------|------|
| 7.1  | 9.6  | 14.0 | 15.8 | 16.9 | 19.8 | 21.8 | 20.8 |

Average in Spain in 2014: 24.4

#### GROSS DISPOSABLE HOUSEHOLD INCOME (2012)

| SCOPE           | €/inhab. | Spain=100 | Change 2011-2012 (%) |
|-----------------|----------|-----------|----------------------|
| Castilla y León | 14,434   | 100.1     | -1.4                 |
| Spain           | 14,414   | 100       | -3.1                 |

Source: INE (for all variables)

### Basic information on the status of the environment

#### LAND. LAND DISTRIBUTION IN % (2013)

| Scope           | Water surface | Artificial surface | Agricultural surface | Forest land and other semi-natural areas (excluding wetlands) | Wetland surface | Total |
|-----------------|---------------|--------------------|----------------------|---|-----------------|-------|
| Castilla y León | 0.5           | 1.3                | 47.1                 | 51.1  | 0.00            | 100.0 |
| Spain           | 0.8           | 2.5                | 41.9                 | 54.6  | 0.2             | 100.0 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

#### NATURE. PROTECTED LAND AREA (2014)

| Scope           | Total protected area |      | PA          |      | Natura 2000 Network |      | Other international figures (ha) |           |          |
|-----------------|----------------------|------|-------------|------|---------------------|------|----------------------------------|-----------|----------|
|                 | ha                   | %    | ha          | %    | ha                  | %    | MAB                              | RAMSAR    | SPAMI    |
| Castilla y León | 2,690,408.2          | 28.6 | 717,091.1   | 7.6  | 2,461,042.8         | 26.1 | 523,032.8                        | 3,040.3   | 0.0      |
| Spain           | 16,145,136.6         | 31.9 | 6,316,313.9 | 12.5 | 13,783,612.5        | 27.2 | 4,791,679.0                      | 281,220.5 | 51,857.9 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

#### NATURE. NUMBER AND AREA OF PROTECTED SPACES IN THE NATURA 2000 NETWORK: SCIs AND SPABs (2014):

| Scope           | Sites of Community Importance |                            |                          |                            | Special Protection Areas for Wild Birds |                             |                       |                             |
|-----------------|-------------------------------|----------------------------|--------------------------|----------------------------|---|-----------------------------|-----------------------|-----------------------------|
|                 | Number of SCIs                | Total surface of SCIs (ha) | Land surface of SCIs (%) | Marine surface of SCIs (%) | Number of SPABs                         | Total surface of SPABs (ha) | Land surface SPAB (%) | Marine surface of SPABs (%) |
| Castilla y León | 120                           | 1,890,154.6                | 100.0                    | 0.0                        | 70.0                                    | 1,997,582.8                 | 100.0                 | 0.0                         |
| Spain           | 1,466                         | 15,777,555.2               | 74.4                     | 25.6                       | 643.0                                   | 15,318,654.4                | 66.1                  | 33.9                        |

In hectares and percentages (percentages have been calculated over the total surface of each figure)

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| AGRICULTURE. ORGANIC FARMING AND IRRIGATION SURFACES (% OF SURFACE AND NUMBER OF OPERATORS IN FARMING) |  |  |   |
|--|--|--|---|
| Scope  | Percentage of irrigation surface with respect to utilised agricultural area (2014) | Percentage of organic farmland with respect to utilised agricultural area (2013) | Organic livestock farming: Number of farms (2013) |
| Castilla y León  | 8.4  | 0.6  | 51  |
| Spain  | 14.4   | 6.3  | 5,808   |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| WASTE. HOUSEHOLD WASTE PER INHABITANT (kg/inhab.) |       |       |       |       |                      |
|---|-------|-------|-------|-------|----------------------|
| Scope   | 2005  | 2010  | 2011  | 2012  | 2005-2012 Change (%) |
| Castilla y León                                   | 490.1 | 368.9 | 400.2 | 377.5 | -23.0                |
| Spain   | 502.8 | 421.7 | 406.8 | 396.5 | -21.1                |

Source: INE

| WATER. AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day) |      |      |      |      |      |      |      |      |                      |
|---|------|------|------|------|------|------|------|------|----------------------|
| Scope   | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2005-2012 Change (%) |
| Castilla y León   | 163  | 150  | 154  | 153  | 162  | 167  | 170  | 152  | -6.7                 |
| Spain   | 170  | 164  | 157  | 154  | 149  | 144  | 142  | 137  | -19.4                |

Source: INE

| AIR. AVERAGE ANNUAL CONCENTRATION IN URBAN AREAS WITH OVER 50,000 INHABITANTS. |                                 |                           |                  |                           |            |
|--|---------------------------------|---------------------------|------------------|---------------------------|------------|
| SCOPE  | AVERAGE IN CASTILLA Y LEÓN      |                           | AVERAGE IN SPAIN |                           |            |
|  | POLLUTING AGENT / CHANGE PERIOD | 2013 (µg/m <sup>3</sup> ) | Change (%)       | 2013 (µg/m <sup>3</sup> ) | Change (%) |
| NO <sub>2</sub> (2001-2013 CHANGE)   |                                 | 16.7                      | -58.1            | 22.9                      | -35.2      |
| PM10 (2001-2013 CHANGE)  |                                 | 15.4                      | -59.1            | 20.9                      | -44.8      |
| PM2.5 (2010-2013 CHANGE)   |                                 | 8.9                       | -18.3            | 11.3                      | -10.1      |
| O <sub>3</sub> Daily eight-hour maximum values (2005-2013 CHANGE)              |                                 | 79.5                      | 19.1             | 75.6                      | 15.3       |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| ENERGY. ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab.) |       |       |       |       |       |                      |
|--|-------|-------|-------|-------|-------|----------------------|
| Scope  | 2010  | 2011  | 2012  | 2013  | 2014  | 2010-2014 Change (%) |
| Castilla y León  | 5.475 | 5.292 | 5.241 | 5.192 | 5.180 | -5.4                 |
| Spain  | 5.863 | 5.735 | 5.652 | 5.540 | 5.519 | -5.9                 |

Source: data compiled by the authors from the REE and INE data

## Environmental reports

- Environmental reports: [http://www.jcyl.es/web/jcyl/MedioAmbiente/es/Plantilla66y33/1284211843825/\\_\\_\\_](http://www.jcyl.es/web/jcyl/MedioAmbiente/es/Plantilla66y33/1284211843825/___)
- Sustainable Development Gazette of Castilla y León: [http://www.jcyl.es/web/jcyl/MedioAmbiente/es/Plantilla100/1284137205110/\\_\\_\\_](http://www.jcyl.es/web/jcyl/MedioAmbiente/es/Plantilla100/1284137205110/___)

## Links to websites of interest on the environment

- Website on the Environment in Castilla y León: [http://www.jcyl.es/web/jcyl/MedioAmbiente/es/Plantilla66y33/1246988359553/\\_\\_\\_](http://www.jcyl.es/web/jcyl/MedioAmbiente/es/Plantilla66y33/1246988359553/___)
- Environmental and Sustainability Indicators: [http://www.jcyl.es/web/jcyl/MedioAmbiente/es/Plantilla66y33\\_100/1246988908512/\\_\\_\\_](http://www.jcyl.es/web/jcyl/MedioAmbiente/es/Plantilla66y33_100/1246988908512/___)
- Statistical Yearbook of Castilla y León: [http://www.estadistica.jcyl.es/web/jcyl/Estadistica/es/Plantilla100/1284180021365/\\_\\_\\_](http://www.estadistica.jcyl.es/web/jcyl/Estadistica/es/Plantilla100/1284180021365/___)

## Relevant data or information

- Approval of the Management Plan for Natural Resources in the Natural Space "Babia y Luna" (León) by virtue of Decree 7/2014 of 20 February (Official Gazette of Castilla y León, of 24 February 2014)
- Approval of the Regional Plan named "Plan Integral de Residuos de Castilla y León" (Comprehensive Plan on Waste in Castilla y León), by virtue of Decree 11/2014 of 20 March (Official Gazette of Castilla y León, of 24 March 2014)
- Approval of the 2014-2022 Programme for the Mobilisation of Forest Resources in Castilla y León, by virtue of Agreement 23/2014 of 30 January (Official Gazette of Castilla y León of 3 February 2014).
- Approval of the Regulatory Bylaws of the management and participation bodies in the National Park of the Sierra de Guadarrama by virtue of Decree 13/2014 of 27 March (Official Gazette of Castilla y León of 31 March 2014).
- Signature of Partnership Protocol between the Ministry of Agriculture, Food and the Environment and the Autonomous Communities of Castilla-La Mancha, Extremadura, Madrid and Castilla y León, so as to establish a single inter-regional hunting and fishing licence across for the territory of all of such\*, published in the Official Gazette of Castilla y León of 28 July 2014



## CASTILLA-LA MANCHA

### Basic geographic and administrative information

**Statute of Autonomy:** Organic Act 9/82, of 10 August (BOE [Spanish State Gazette] 195, 16 August 1982)

**Area:** 79,462 km<sup>2</sup>

**Capital:** Toledo **Provinces:** 5 **Municipalities:** 919

**Population (2014):** 2,078,611 inhab.

**Population density (2014):** 26.2 inhab./km<sup>2</sup>

**Change in No. of inhabitants (%) 2000-2014:** 19.9 / **2013-2014:** -1.1



### Basic socio-economic information

#### POPULATION BY SIZE OF MUNICIPALITY (%). YEAR 2014

| SCOPE              | < 10,000 | 10,001-100,000 | 100,001-500,000 | > 500,000 inhab. |
|--------------------|----------|----------------|-----------------|------------------|
| Castilla-La Mancha | 43.3     | 48.4           | 8.3             | 0.0              |
| Spain              | 20.9     | 39.6           | 23.6            | 16.0             |

#### GDP PER CAPITA AT MARKET PRICES. YEAR 2014 (1<sup>st</sup> EST.)

| SCOPE              | €/inhab. | Spain=100 | 2013-2014 Change (%) |
|--------------------|----------|-----------|----------------------|
| Castilla-La Mancha | 18,307   | 80.4      | 0.2                  |
| Spain              | 22,780   | 100       | 1.2                  |

#### EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2014

| SCOPE              | Agriculture | Industry | Construction | Services |
|--------------------|-------------|----------|--------------|----------|
| Castilla-La Mancha | 7.2         | 15.5     | 6.5          | 70.9     |
| Spain              | 4.2         | 13.7     | 5.7          | 76.3     |

#### GVA SECTOR STRUCTURE (%). YEAR 2014

| SCOPE              | Agriculture | Industry | Construction | Services |
|--------------------|-------------|----------|--------------|----------|
| Castilla-La Mancha | 7.5         | 22.7     | 6.7          | 63.1     |
| Spain              | 2.5         | 17.5     | 5.6          | 74.4     |

#### UNEMPLOYMENT RATE

| 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|------|------|------|------|------|------|------|------|
| 7.7  | 11.7 | 18.9 | 21.2 | 23.1 | 28.6 | 30.0 | 29.0 |

Average in Spain in 2014: 24.4

#### GROSS DISPOSABLE HOUSEHOLD INCOME (2012)

| SCOPE              | €/inhab. | Spain=100 | Change 2011-2012 (%) |
|--------------------|----------|-----------|----------------------|
| Castilla-La Mancha | 11,949   | 82.9      | -3.2                 |
| Spain              | 14,414   | 100       | -3.1                 |

Source: INE (for all variables)

### Basic information on the status of the environment

#### LAND. LAND DISTRIBUTION IN % (2013)

| Scope              | Water surface | Artificial surface | Agricultural surface | Forest land and other semi-natural areas (excluding wetlands) | Wetland surface | Total |
|--------------------|---------------|--------------------|----------------------|---|-----------------|-------|
| Castilla-La Mancha | 0.5           | 1.1                | 53.1                 | 45.1  | 0.2             | 100.0 |
| Spain              | 0.8           | 2.5                | 41.9                 | 54.6  | 0.2             | 100.0 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

#### NATURE. PROTECTED LAND AREA (2014)

| Scope              | Total protected area |      | PA          |      | Natura 2000 Network |      | Other international figures (ha) |           |          |
|--------------------|----------------------|------|-------------|------|---------------------|------|----------------------------------|-----------|----------|
|                    | ha                   | %    | ha          | %    | ha                  | %    | MAB                              | RAMSAR    | SPAMI    |
| Castilla-La Mancha | 2,278,209.7          | 28.7 | 580,904.2   | 7.3  | 1,838,207.5         | 23.1 | 418,066.2                        | 10,341.9  | 0.0      |
| Spain              | 16,145,136.6         | 31.9 | 6,316,313.9 | 12.5 | 13,783,612.5        | 27.2 | 4,791,679.0                      | 281,220.5 | 51,857.9 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

#### NATURE. NUMBER AND AREA OF PROTECTED SPACES IN THE NATURA 2000 NETWORK: SCIs AND SPABs (2014):

| Scope              | Sites of Community Importance |                            |                          |                            | Special Protection Areas for Wild Birds |                             |                       |                             |
|--------------------|-------------------------------|----------------------------|--------------------------|----------------------------|---|-----------------------------|-----------------------|-----------------------------|
|                    | Number of SCIs                | Total surface of SCIs (ha) | Land surface of SCIs (%) | Marine surface of SCIs (%) | Number of SPABs                         | Total surface of SPABs (ha) | Land surface SPAB (%) | Marine surface of SPABs (%) |
| Castilla-La Mancha | 72                            | 1,564,441.6                | 100.0                    | 0.0                        | 38.0                                    | 1,579,760.5                 | 100.0                 | 0.0                         |
| Spain              | 1,466                         | 15,777,555.2               | 74.4                     | 25.6                       | 643.0                                   | 15,318,654.4                | 66.1                  | 33.9                        |

In hectares and percentages (percentages have been calculated over the total surface of each figure)

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| AGRICULTURE. ORGANIC FARMING AND IRRIGATION SURFACES (% OF SURFACE AND NUMBER OF OPERATORS IN FARMING) |  |  |   |
|--|--|--|---|
| Scope  | Percentage of irrigation surface with respect to utilised agricultural area (2014) | Percentage of organic farmland with respect to utilised agricultural area (2013) | Organic livestock farming: Number of farms (2013) |
| Castilla-La Mancha   | 12.0   | 6.9  | 278   |
| Spain  | 14.4   | 6.3  | 5,808   |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| WASTE. HOUSEHOLD WASTE PER INHABITANT (kg/inhab.) |       |       |       |       |                      |
|---|-------|-------|-------|-------|----------------------|
| Scope   | 2005  | 2010  | 2011  | 2012  | 2005-2012 Change (%) |
| Castilla-La Mancha                                | 509   | 491.4 | 499.3 | 409.5 | -19.5                |
| Spain   | 502.8 | 421.7 | 406.8 | 396.5 | -21.1                |

Source: INE

| WATER. AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day) |      |      |      |      |      |      |      |      |                      |
|---|------|------|------|------|------|------|------|------|----------------------|
| Scope   | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2005-2012 Change (%) |
| Castilla-La Mancha  | 177  | 170  | 163  | 155  | 146  | 152  | 156  | 146  | -17.5                |
| Spain   | 170  | 164  | 157  | 154  | 149  | 144  | 142  | 137  | -19.4                |

Source: INE

| AIR. AVERAGE ANNUAL CONCENTRATION IN URBAN AREAS WITH OVER 50,000 INHABITANTS. |                                 |                           |                  |                           |            |
|--|---------------------------------|---------------------------|------------------|---------------------------|------------|
| SCOPE  | AVERAGE IN CASTILLA-LA MANCHA   |                           | AVERAGE IN SPAIN |                           |            |
|  | POLLUTING AGENT / CHANGE PERIOD | 2013 (µg/m <sup>3</sup> ) | Change (%)       | 2013 (µg/m <sup>3</sup> ) | Change (%) |
| NO <sub>2</sub> (2001-2013 CHANGE)   |                                 | 14.9                      | -24.5            | 22.9                      | -35.2      |
| PM10 (2001-2013 CHANGE)  |                                 | 20.5                      | -50.0            | 20.9                      | -44.8      |
| PM2.5 (2010-2013 CHANGE)   |                                 | 12.9                      | -19.6            | 11.3                      | -10.1      |
| O <sub>3</sub> Daily eight-hour maximum values (2005-2013 CHANGE)              |                                 | 77.5                      | -9.6             | 75.6                      | 15.3       |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| ENERGY. ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab.) |       |       |       |       |       |                      |
|--|-------|-------|-------|-------|-------|----------------------|
| Scope  | 2010  | 2011  | 2012  | 2013  | 2014  | 2010-2014 Change (%) |
| Castilla-La Mancha   | 5.759 | 5.673 | 5.553 | 5.355 | 5.378 | -6.6                 |
| Spain  | 5.863 | 5.735 | 5.652 | 5.540 | 5.519 | -5.9                 |

Source: data compiled by the authors from the REE and INE data

## Environmental reports

- 2013 Air Quality Data. [http://pagina.jcm.es/medioambiente/rvca/pdfs/INFORME\\_ANUAL\\_2013\\_v3.pdf](http://pagina.jcm.es/medioambiente/rvca/pdfs/INFORME_ANUAL_2013_v3.pdf)

## Links to websites of interest on the environment

- <http://www.castillalamancha.es/tema/medio-ambiente/calidad-ambiental>
- <http://calidaddel aire.castillalamancha.es/cecomaweb/>
- <http://www.castillalamancha.es/tema/medio-ambiente/medio-natural>
- <http://www.castillalamancha.es/tema/medio-ambiente/caza-y-pesca>
- <http://www.castillalamancha.es/tema/medio-ambiente/gest%C3%B3n-del-agua-y-energ%C3%ADas-renovables>
- <http://www.castillalamancha.es/tema/medio-ambiente/cambio-clim%C3%A1tico>

## Relevant data or information

- 2014-2020 Climate Change Strategy [http://www.castillalamancha.es/sites/default/files/documentos/pdf/20140317/1402\\_ecc\\_clm.pdf](http://www.castillalamancha.es/sites/default/files/documentos/pdf/20140317/1402_ecc_clm.pdf)
- 2015 Environmental Inspection Programme [http://www.castillalamancha.es/sites/default/files/documentos/pdf/20150327/p\\_insp\\_clm\\_2015\\_web.pdf](http://www.castillalamancha.es/sites/default/files/documentos/pdf/20150327/p_insp_clm_2015_web.pdf)
- 2012-2018 Environmental Inspection Programme [http://www.castillalamancha.es/sites/default/files/documentos/pdf/20120912/plan\\_de\\_inspeccion\\_medioambiental\\_clm\\_2012.pdf](http://www.castillalamancha.es/sites/default/files/documentos/pdf/20120912/plan_de_inspeccion_medioambiental_clm_2012.pdf)
- Environmental Assessment: Guide for Town Halls [http://www.castillalamancha.es/sites/default/files/documentos/pdf/20150113/guias\\_ea\\_ayuntamiento.pdf](http://www.castillalamancha.es/sites/default/files/documentos/pdf/20150113/guias_ea_ayuntamiento.pdf)
- Environmental Assessment: Guide for substantive bodies [http://www.castillalamancha.es/sites/default/files/documentos/pdf/20150113/guias\\_ea\\_organos\\_sustantivos.pdf](http://www.castillalamancha.es/sites/default/files/documentos/pdf/20150113/guias_ea_organos_sustantivos.pdf)
- Plan for industrial waste. [http://www.castillalamancha.es/sites/default/files/documentos/pdf/20150219/plan\\_de\\_gestion\\_de\\_residuos\\_industriales\\_c1m\\_2014-2020.pdf](http://www.castillalamancha.es/sites/default/files/documentos/pdf/20150219/plan_de_gestion_de_residuos_industriales_c1m_2014-2020.pdf)
- Publications on Forestries. <http://www.castillalamancha.es/gobierno/agricultura/estructura/dgamen/actuaciones/publicaciones-forestales>
- Publications on biodiversity and natural spaces. <http://www.castillalamancha.es/gobierno/agricultura/estructura/dgamen/actuaciones/publicaciones-sobre-biodiversidad-y-espacios-naturales>
- Subsidies and energy saving <http://www.castillalamancha.es/gobierno/fomento/estructura/dgfiem/actuaciones/ayudas-ahorro-energ%C3%A9tico>
- Strategic actions by the Directorate of Industry, Energy and Mining <http://www.castillalamancha.es/gobierno/fomento/estructura/dgfiem/actuaciones/actuaciones-estrat%C3%A9gicas-de-la-direcci%C3%B3n-general-de-industria-energ%C3%ADa-y-minas>



## CATALONIA

### Basic geographic and administrative information

**Statute of Autonomy:** Organic Act 6/2006, of 19 July (BOE [Spanish State Gazette] 172, 22 July 2006)

**Area:** 32,091 km<sup>2</sup>

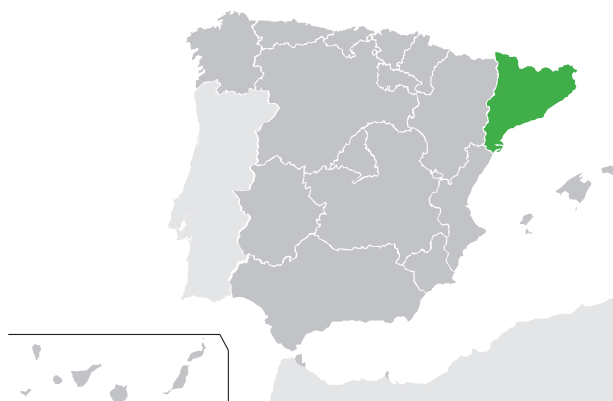
**Average coastline length:** 706 km (8.7% of the total)

**Capital:** Barcelona **Provinces:** 4 **Municipalities:** 947

**Population (2014):** 7,518,903 inhab.

**Population density (2014):** 234.1 inhab./km<sup>2</sup>

**Change in No. of inhabitants (%) 2000-2014:** 20.1 / **2013-2014:** -0.5



### Basic socio-economic information

| POPULATION BY SIZE OF MUNICIPALITY (%). YEAR 2014 |          |                |                 |                  |
|---|----------|----------------|-----------------|------------------|
| SCOPE   | < 10,000 | 10,001-100,000 | 100,001-500,000 | > 500,000 inhab. |
| Catalonia   | 18.8     | 39.8           | 20.1            | 21.3             |
| Spain   | 20.9     | 39.6           | 23.6            | 16.0             |

| GDP PER CAPITA AT MARKET PRICES. YEAR 2014 (1 <sup>st</sup> EST.) |          |           |                      |
|---|----------|-----------|----------------------|
| SCOPE   | €/inhab. | Spain=100 | 2013-2014 Change (%) |
| Catalonia   | 26,996   | 118.5     | 1.8                  |
| Spain   | 22,780   | 100       | 1.2                  |

| EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|--|-------------|----------|--------------|----------|
| SCOPE                                      | Agriculture | Industry | Construction | Services |
| Catalonia                                  | 1.5         | 18.4     | 6.0          | 74.1     |
| Spain                                      | 4.2         | 13.7     | 5.7          | 76.3     |

| GVA SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|-------------------------------------|-------------|----------|--------------|----------|
| SCOPE                               | Agriculture | Industry | Construction | Services |
| Catalonia                           | 1.1         | 20.9     | 4.8          | 73.2     |
| Spain                               | 2.5         | 17.5     | 5.6          | 74.4     |

| UNEMPLOYMENT RATE              |      |      |      |      |      |      |      |
|--------------------------------|------|------|------|------|------|------|------|
| 2007                           | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| 6.5                            | 8.9  | 16.2 | 17.7 | 19.2 | 22.5 | 23.1 | 20.3 |
| Average in Spain in 2014: 24.4 |      |      |      |      |      |      |      |

| GROSS DISPOSABLE HOUSEHOLD INCOME (2012) |          |           |                      |
|--|----------|-----------|----------------------|
| SCOPE                                    | €/inhab. | Spain=100 | Change 2011-2012 (%) |
| Catalonia                                | 16,618   | 115.3     | -2.4                 |
| Spain                                    | 14,414   | 100       | -3.1                 |

Source: INE (for all variables)

### Basic information on the status of the environment

| LAND. LAND DISTRIBUTION IN % (2013) |               |                    |                      |   |                 |       |
|-------------------------------------|---------------|--------------------|----------------------|---|-----------------|-------|
| Scope                               | Water surface | Artificial surface | Agricultural surface | Forest land and other semi-natural areas (excluding wetlands) | Wetland surface | Total |
| Catalonia                           | 0.6           | 4.5                | 34.8                 | 59.9  | 0.2             | 100.0 |
| Spain                               | 0.8           | 2.5                | 41.9                 | 54.6  | 0.2             | 100.0 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| NATURE. PROTECTED LAND AREA (2014) |                      |      |             |      |                     |      |                                  |           |          |
|------------------------------------|----------------------|------|-------------|------|---------------------|------|----------------------------------|-----------|----------|
| Scope                              | Total protected area |      | PA          |      | Natura 2000 Network |      | Other international figures (ha) |           |          |
|                                    | ha                   | %    | ha          | %    | ha                  | %    | MAB                              | RAMSAR    | SPAMI    |
| Catalonia                          | 1,226,183.6          | 38.1 | 1,024,149.7 | 31.8 | 979,254.1           | 30.4 | 337,925.5                        | 52,963.4  | 10,871.2 |
| Spain                              | 16,145,136.6         | 31.9 | 6,316,313.9 | 12.5 | 13,783,612.5        | 27.2 | 4,791,679.0                      | 281,220.5 | 51,857.9 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| NATURE. NUMBER AND AREA OF PROTECTED SPACES IN THE NATURA 2000 NETWORK: SCIs AND SPABs (2014): |                               |                            |                          |                            |   |                             |                       |                             |
|--|-------------------------------|----------------------------|--------------------------|----------------------------|---|-----------------------------|-----------------------|-----------------------------|
| Scope  | Sites of Community Importance |                            |                          |                            | Special Protection Areas for Wild Birds |                             |                       |                             |
|  | Number of SCIs                | Total surface of SCIs (ha) | Land surface of SCIs (%) | Marine surface of SCIs (%) | Number of SPABs                         | Total surface of SPABs (ha) | Land surface SPAB (%) | Marine surface of SPABs (%) |
| Catalonia  | 115                           | 1,041,462.2                | 91.8                     | 8.2                        | 73.0                                    | 913,421.1                   | 91.6                  | 8.4                         |
| Spain  | 1,466                         | 15,777,555.2               | 74.4                     | 25.6                       | 643.0                                   | 15,318,654.4                | 66.1                  | 33.9                        |

In hectares and percentages (percentages have been calculated over the total surface of each figure) Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| AGRICULTURE. ORGANIC FARMING AND IRRIGATION SURFACES (% OF SURFACE AND NUMBER OF OPERATORS IN FARMING) |  |  |   |
|--|--|--|---|
| Scope  | Percentage of irrigation surface with respect to utilised agricultural area (2014) | Percentage of organic farmland with respect to utilised agricultural area (2013) | Organic livestock farming: Number of farms (2013) |
| Catalonia  | 24.7   | 9.0  | 667   |
| Spain  | 14.4   | 6.3  | 5,808   |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| WASTE. HOUSEHOLD WASTE PER INHABITANT (kg/inhab.) |       |       |       |       |                      |
|---|-------|-------|-------|-------|----------------------|
| Scope   | 2005  | 2010  | 2011  | 2012  | 2005-2012 Change (%) |
| Catalonia   | 451.2 | 345.1 | 358.1 | 330.4 | -26.8                |
| Spain   | 502.8 | 421.7 | 406.8 | 396.5 | -21.1                |

Source: INE

| WATER. AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day) |      |      |      |      |      |      |      |      |                      |
|---|------|------|------|------|------|------|------|------|----------------------|
| Scope   | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2005-2012 Change (%) |
| Catalonia   | 167  | 154  | 151  | 139  | 132  | 133  | 130  | 126  | -24.6                |
| Spain   | 170  | 164  | 157  | 154  | 149  | 144  | 142  | 137  | -19.4                |

Source: INE

| AIR. AVERAGE ANNUAL CONCENTRATION IN URBAN AREAS WITH OVER 50,000 INHABITANTS. |                           |            |                           |            |
|--|---------------------------|------------|---------------------------|------------|
| SCOPE  | AVERAGE IN CATALUNYA      |            | AVERAGE IN SPAIN          |            |
|  | 2013 (µg/m <sup>3</sup> ) | Change (%) | 2013 (µg/m <sup>3</sup> ) | Change (%) |
| NO <sub>2</sub> (2001-2013 CHANGE)   | 32.4                      | -12.1      | 22.9                      | -35.2      |
| PM10 (2001-2013 CHANGE)  | 22.6                      | -46.5      | 20.9                      | -44.8      |
| PM2.5 (2010-2013 CHANGE)   | 14.7                      | 1.0        | 11.3                      | -10.1      |
| O <sub>3</sub> Daily eight-hour maximum values (2005-2013 CHANGE)              | 73.0                      | 22.8       | 75.6                      | 15.3       |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| ENERGY. ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab.) |       |       |       |       |       |                      |
|--|-------|-------|-------|-------|-------|----------------------|
| Scope  | 2010  | 2011  | 2012  | 2013  | 2014  | 2010-2014 Change (%) |
| Catalonia  | 6.527 | 6.392 | 6.349 | 6.189 | 6.155 | -5.7                 |
| Spain  | 5.863 | 5.735 | 5.652 | 5.540 | 5.519 | -5.9                 |

Source: data compiled by the authors from the REE and INE data

## Environmental reports

- Environmental Data of Catalonia, 2014
- Medi Ambient a Catalunya. 2013 Report
- Informe sobre l'estat del Medi Ambient a Catalunya. Període 2006-2010

## Links to websites of interest on the environment

- Website of the Secretariat of the Environment and Sustainability. <http://mediambient.gencat.cat/ca/>
- Website of the Waste Agency of Catalonia. <http://residus.gencat.cat/ca/index.html>
- Website of the Water Agency of Catalonia. [http://aca-web.gencat.cat/aca/appmanager/aca/aca?\\_nfpb=true&\\_pageLabel=portals\\_ACA\\_portal\\_page\\_1](http://aca-web.gencat.cat/aca/appmanager/aca/aca?_nfpb=true&_pageLabel=portals_ACA_portal_page_1)
- Website of Aguas Ter-Llobregat. <http://www.atll.cat/ca/page.asp?id=1>
- Website of the Meteorological Service of Catalonia. <http://www.meteo.cat/>
- Website of the Department of Land and Sustainability. <http://www.20gencat.cat/portal/site/territori>
- Website of the Department of Agriculture, Farming, Food and the Natural Environment. <http://agriculturagencat.cat/ca/ambits/medi-natural/>
- Website of the Catalan Institute of Energy. <http://icaengencat.cat/ca/index.html>
- Website of the Department of Internal Affairs. Civil protection. [http://interior.gencat.cat/ca/arees\\_dactuacio/proteccio\\_civil/plans\\_de\\_proteccio\\_civil/plans\\_de\\_proteccio\\_civil\\_a\\_catalunya/](http://interior.gencat.cat/ca/arees_dactuacio/proteccio_civil/plans_de_proteccio_civil/plans_de_proteccio_civil_a_catalunya/)
- Website of the Environmental Epidemiology Research Centre. <http://www.creal.cat/>

## Relevant data or information

In 2014, environmental information has been published by means of environmental reports drafted every year in compliance with Act 27/2006, of 18 July. In 2014, an update of the contents published for the purpose of removing obsolete data or information no longer of use (completed action plans) was carried out, along with an addition of new data which have arisen as a result of progress and changes in society (new technologies).



## CEUTA

### Basic geographic and administrative information

**Statute of Autonomy:** Organic Act 2/1995, of 13 March (BOE [Spanish State Gazette] 62, 14 March 1995)

**Area:** 19 km<sup>2</sup>

**Average coastline length:** 21 km (0.2% of the total)

**Capital:** Ceuta **Provinces:** 1 **Municipalities:** 1

**Population (2014):** 84,963 inhab.

**Population density (2014):** 4,471.7 inhab./km<sup>2</sup>

**Change in No. of inhabitants (%) 2000-2014:** 12.9 / **2013-2014:** 0.9



### Basic socio-economic information

| POPULATION BY SIZE OF MUNICIPALITY (%). YEAR 2014 |          |                |                 |                  |
|---|----------|----------------|-----------------|------------------|
| SCOPE   | < 10,000 | 10,001-100,000 | 100,001-500,000 | > 500,000 inhab. |
| Ceuta   | 0.0      | 100.0          | 0.0             | 0.0              |
| Spain   | 20.9     | 39.6           | 23.6            | 16.0             |

| GDP PER CAPITA AT MARKET PRICES. YEAR 2014 (1 <sup>st</sup> EST.) |          |           |                      |
|---|----------|-----------|----------------------|
| SCOPE   | €/inhab. | Spain=100 | 2013-2014 Change (%) |
| Ceuta   | 18,550   | 81.4      | 0.6                  |
| Spain   | 22,780   | 100       | 1.2                  |

| EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|--|-------------|----------|--------------|----------|
| SCOPE                                      | Agriculture | Industry | Construction | Services |
| Ceuta                                      | 0.5         | 4.0      | 2.5          | 93.0     |
| Spain                                      | 4.2         | 13.7     | 5.7          | 76.3     |

| GVA SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|-------------------------------------|-------------|----------|--------------|----------|
| SCOPE                               | Agriculture | Industry | Construction | Services |
| Ceuta                               | 0.2         | 5.0      | 4.7          | 90.1     |
| Spain                               | 2.5         | 17.5     | 5.6          | 74.4     |

| UNEMPLOYMENT RATE              |      |      |      |      |      |      |      |
|--------------------------------|------|------|------|------|------|------|------|
| 2007                           | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| 21.0                           | 17.4 | 18.6 | 23.9 | 27.7 | 37.0 | 34.8 | 31.9 |
| Average in Spain in 2014: 24.4 |      |      |      |      |      |      |      |

| GROSS DISPOSABLE HOUSEHOLD INCOME (2012) |          |           |                      |
|--|----------|-----------|----------------------|
| SCOPE                                    | €/inhab. | Spain=100 | Change 2011-2012 (%) |
| Ceuta                                    | 12,065   | 83.7      | -7.1                 |
| Spain                                    | 14,414   | 100       | -3.1                 |
| Source: INE (for all variables)          |          |           |                      |

### Basic information on the status of the environment

| LAND. LAND DISTRIBUTION IN % (2013)   |               |                    |                      |   |                 |       |
|---|---------------|--------------------|----------------------|---|-----------------|-------|
| Scope   | Water surface | Artificial surface | Agricultural surface | Forest land and other semi-natural areas (excluding wetlands) | Wetland surface | Total |
| Ceuta   | -             | -                  | -                    | -   | -               | -     |
| Spain   | 0.8           | 2.5                | 41.9                 | 54.6  | 0.2             | 100.0 |
| Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment) |               |                    |                      |   |                 |       |

| NATURE. PROTECTED LAND AREA (2014)  |                      |      |             |      |                     |      |                                  |           |          |
|---|----------------------|------|-------------|------|---------------------|------|----------------------------------|-----------|----------|
| Scope   | Total protected area |      | PA          |      | Natura 2000 Network |      | Other international figures (ha) |           |          |
|   | ha                   | %    | ha          | %    | ha                  | %    | MAB                              | RAMSAR    | SPAMI    |
| Ceuta   | 630.5                | 31.8 | 0.0         | 0.0  | 630.5               | 31.8 | 0.0                              | 0.0       | 0.0      |
| Spain   | 16,145,136.6         | 31.9 | 6,316,313.9 | 12.5 | 13,783,612.5        | 27.2 | 4,791,679.0                      | 281,220.5 | 51,857.9 |
| Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment) |                      |      |             |      |                     |      |                                  |           |          |

| NATURE. NUMBER AND AREA OF PROTECTED SPACES IN THE NATURA 2000 NETWORK: SCIs AND SPABs (2014):       |                               |                            |                          |                            |   |                             |                       |                             |
|--|-------------------------------|----------------------------|--------------------------|----------------------------|---|-----------------------------|-----------------------|-----------------------------|
| Scope  | Sites of Community Importance |                            |                          |                            | Special Protection Areas for Wild Birds |                             |                       |                             |
|  | Number of SCIs                | Total surface of SCIs (ha) | Land surface of SCIs (%) | Marine surface of SCIs (%) | Number of SPABs                         | Total surface of SPABs (ha) | Land surface SPAB (%) | Marine surface of SPABs (%) |
| Ceuta  | 2                             | 1,466.7                    | 43.0                     | 57.0                       | 2.0                                     | 630.3                       | 100.0                 | 0.0                         |
| Spain  | 1,466                         | 15,777,555.2               | 74.4                     | 25.6                       | 643.0                                   | 15,318,654.4                | 66.1                  | 33.9                        |
| In hectares and percentages (percentages have been calculated over the total surface of each figure) |                               |                            |                          |                            |   |                             |                       |                             |
| Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)                          |                               |                            |                          |                            |   |                             |                       |                             |



| AGRICULTURE. ORGANIC FARMING AND IRRIGATION SURFACES (% OF SURFACE AND NUMBER OF OPERATORS IN FARMING) |  |  |   |
|--|--|--|---|
| Scope  | Percentage of irrigation surface with respect to utilised agricultural area (2014) | Percentage of organic farmland with respect to utilised agricultural area (2013) | Organic livestock farming: Number of farms (2013) |
| Ceuta  | -  | -  | -   |
| Spain  | 14.4   | 6.3  | 5,808   |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| WASTE. HOUSEHOLD WASTE PER INHABITANT (kg/inhab.) |       |       |       |       |                      |
|---|-------|-------|-------|-------|----------------------|
| Scope   | 2005  | 2010  | 2011  | 2012  | 2005-2012 Change (%) |
| Ceuta and Melilla                                 | 586.2 | -     | -     | -     | -                    |
| Spain   | 502.8 | 421.7 | 406.8 | 396.5 | -21.1                |

Source: INE

| WATER. AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day) |      |      |      |      |      |      |      |      |                      |
|---|------|------|------|------|------|------|------|------|----------------------|
| Scope   | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2005-2012 Change (%) |
| Ceuta and Melilla   | 141  | 145  | 135  | 133  | 126  | 163  | 170  | 118  | -16.3                |
| Spain   | 170  | 164  | 157  | 154  | 149  | 144  | 142  | 137  | -19.4                |

Source: INE

| AIR. AVERAGE ANNUAL CONCENTRATION IN URBAN AREAS WITH OVER 50,000 INHABITANTS. |                                 |                           |                  |                           |            |
|--|---------------------------------|---------------------------|------------------|---------------------------|------------|
| SCOPE  | AVERAGE IN CEUTA                |                           | AVERAGE IN SPAIN |                           |            |
|  | POLLUTING AGENT / CHANGE PERIOD | 2013 (µg/m <sup>3</sup> ) | Change (%)       | 2013 (µg/m <sup>3</sup> ) | Change (%) |
| NO <sub>2</sub> (2001-2013 CHANGE)   |                                 | -                         | -                | 22.9                      | -35.2      |
| PM10 (2001-2013 CHANGE)  |                                 | -                         | -                | 20.9                      | -44.8      |
| PM2.5 (2010-2013 CHANGE)   |                                 | -                         | -                | 11.3                      | -10.1      |
| O <sub>3</sub> Daily eight-hour maximum values (2005-2013 CHANGE)              |                                 | -                         | -                | 75.6                      | 15.3       |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| ENERGY. ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab.) |       |       |       |       |       |                      |
|--|-------|-------|-------|-------|-------|----------------------|
| Scope  | 2010  | 2011  | 2012  | 2013  | 2014  | 2010-2014 Change (%) |
| Ceuta  | 2.700 | 2.464 | 2.524 | 2.399 | 2.498 | -7.5                 |
| Spain  | 5.863 | 5.735 | 5.652 | 5.540 | 5.519 | -5.9                 |

Source: data compiled by the authors from the REE and INE data

### Links to websites of interest on the environment

- <http://www.ceuta.es/ceuta/>
- <http://www.ceuta.es/ceuta/por-consejerias/medio-ambiente-servicios-comunitarios-y-barridas> <http://www.obimasa.es/>

### Relevant data or information

Development of works for the preparation of the Management Plan for Natural Resources and for the Management of the Natura Network 2000 Protected Area (SIC-SPA) of "Calamocarro-Benzú" <http://www.ceuta.es/porng/plan.html>



## EXTREMADURA

### Basic geographic and administrative information

**Statute of Autonomy:** Organic Act 1/83, of 25 February (BOE [Spanish State Gazette] 49, 26 February 1983)

**Area:** 41,635 km<sup>2</sup>

**Capital:** Mérida **Provinces:** **Municipalities:** 385

**Population (2014):** 1,099,632 inhab.

**Population density (2014):** 26.4 inhab./km<sup>2</sup>

**Change in No. of inhabitants (%) 2000-2014:** 2.8 / **2013-2014:** -0.4



### Basic socio-economic information

#### POPULATION BY SIZE OF MUNICIPALITY (%). YEAR 2014

| SCOPE       | < 10,000 | 10,001-100,000 | 100,001-500,000 | > 500,000 inhab. |
|-------------|----------|----------------|-----------------|------------------|
| Extremadura | 50.6     | 35.7           | 13.7            | 0.0              |
| Spain       | 20.9     | 39.6           | 23.6            | 16.0             |

#### GDP PER CAPITA AT MARKET PRICES. YEAR 2014 (1<sup>st</sup> EST.)

| SCOPE       | €/inhab. | Spain=100 | 2013-2014 Change (%) |
|-------------|----------|-----------|----------------------|
| Extremadura | 15,752   | 69.1      | 1.6                  |
| Spain       | 22,780   | 100       | 1.2                  |

#### EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2014

| SCOPE       | Agriculture | Industry | Construction | Services |
|-------------|-------------|----------|--------------|----------|
| Extremadura | 10.9        | 10.8     | 7.0          | 71.3     |
| Spain       | 4.2         | 13.7     | 5.7          | 76.3     |

#### GVA SECTOR STRUCTURE (%). YEAR 2014

| SCOPE       | Agriculture | Industry | Construction | Services |
|-------------|-------------|----------|--------------|----------|
| Extremadura | 6.4         | 14.3     | 7.3          | 72.0     |
| Spain       | 2.5         | 17.5     | 5.6          | 74.4     |

#### UNEMPLOYMENT RATE

| 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|------|------|------|------|------|------|------|------|
| 13.0 | 15.4 | 20.6 | 23.0 | 25.1 | 33.1 | 33.9 | 29.8 |

Average in Spain in 2014: 24.4

#### GROSS DISPOSABLE HOUSEHOLD INCOME (2012)

| SCOPE       | €/inhab. | Spain=100 | Change 2011-2012 (%) |
|-------------|----------|-----------|----------------------|
| Extremadura | 10,805   | 75.0      | -3.1                 |
| Spain       | 14,414   | 100       | -3.1                 |

Source: INE (for all variables)

### Basic information on the status of the environment

#### LAND. LAND DISTRIBUTION IN % (2013)

| Scope       | Water surface | Artificial surface | Agricultural surface | Forest land and other semi-natural areas (excluding wetlands) | Wetland surface | Total |
|-------------|---------------|--------------------|----------------------|---|-----------------|-------|
| Extremadura | 2.0           | 0.8                | 31.8                 | 65.4  | 0.0             | 100.0 |
| Spain       | 0.8           | 2.5                | 41.9                 | 54.6  | 0.2             | 100.0 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

#### NATURE. PROTECTED LAND AREA (2014)

| Scope       | Total protected area |      | PA          |      | Natura 2000 Network |      | Other international figures (ha) |           |          |
|-------------|----------------------|------|-------------|------|---------------------|------|----------------------------------|-----------|----------|
|             | ha                   | %    | ha          | %    | ha                  | %    | MAB                              | RAMSAR    | SPAMI    |
| Extremadura | 1,277,208.1          | 30.6 | 313,611.9   | 7.5  | 1,263,937.0         | 30.3 | 116,161.8                        | 6,990.4   | 0.0      |
| Spain       | 16,145,136.6         | 31.9 | 6,316,313.9 | 12.5 | 13,783,612.5        | 27.2 | 4,791,679.0                      | 281,220.5 | 51,857.9 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

#### NATURE. NUMBER AND AREA OF PROTECTED SPACES IN THE NATURA 2000 NETWORK: SCIs AND SPABs (2014):

| Scope       | Sites of Community Importance |                            |                          |                            | Special Protection Areas for Wild Birds |                             |                       |                             |
|-------------|-------------------------------|----------------------------|--------------------------|----------------------------|---|-----------------------------|-----------------------|-----------------------------|
|             | Number of SCIs                | Total surface of SCIs (ha) | Land surface of SCIs (%) | Marine surface of SCIs (%) | Number of SPABs                         | Total surface of SPABs (ha) | Land surface SPAB (%) | Marine surface of SPABs (%) |
| Extremadura | 89                            | 933,776.6                  | 100.0                    | 0.0                        | 71.0                                    | 1,102,432.7                 | 100.0                 | 0.0                         |
| Spain       | 1,466                         | 15,777,555.2               | 74.4                     | 25.6                       | 643.0                                   | 15,318,654.4                | 66.1                  | 33.9                        |

In hectares and percentages (percentages have been calculated over the total surface of each figure)  
Source: Data of Extremadura provided by the autonomous community. Data on Spain provided by the Ministry of Agriculture, Food and the Environment. Data that are not comparable to other autonomous communities or to the average in Spain

| AGRICULTURE. ORGANIC FARMING AND IRRIGATION SURFACES (% OF SURFACE AND NUMBER OF OPERATORS IN FARMING) |  |  |   |
|--|--|--|---|
| Scope  | Percentage of irrigation surface with respect to utilised agricultural area (2014) | Percentage of organic farmland with respect to utilised agricultural area (2013) | Organic livestock farming: Number of farms (2013) |
| Extremadura  | 6.5  | 1.8  | 149   |
| Spain  | 14.4   | 6.3  | 5,808   |

Source: Data of Extremadura provided by the autonomous community. Data of Spain provided by the Ministry of Agriculture, Food and the Environment. Data that are not comparable to other autonomous communities or to the average in Spain

| WASTE. HOUSEHOLD WASTE PER INHABITANT (kg/inhab.) |       |       |       |       |                      |
|---|-------|-------|-------|-------|----------------------|
| Scope   | 2005  | 2010  | 2011  | 2012  | 2005-2012 Change (%) |
| Extremadura                                       | 459.2 | 469.4 | 422.2 | 400.9 | -12.7                |
| Spain   | 502.8 | 421.7 | 406.8 | 396.5 | -21.1                |

Source: INE

| WATER. AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day) |      |      |      |      |      |      |      |      |                      |
|---|------|------|------|------|------|------|------|------|----------------------|
| Scope   | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2005-2012 Change (%) |
| Extremadura   | 175  | 185  | 187  | 158  | 163  | 160  | 144  | 140  | -20.0                |
| Spain   | 170  | 164  | 157  | 154  | 149  | 144  | 142  | 137  | -19.4                |

Source: INE

| AIR. AVERAGE ANNUAL CONCENTRATION IN URBAN AREAS WITH OVER 50,000 INHABITANTS. |                                 |                           |                  |                           |            |
|--|---------------------------------|---------------------------|------------------|---------------------------|------------|
| SCOPE  | AVERAGE IN EXTREMADURA          |                           | AVERAGE IN SPAIN |                           |            |
|  | POLLUTING AGENT / CHANGE PERIOD | 2013 (µg/m <sup>3</sup> ) | Change (%)       | 2013 (µg/m <sup>3</sup> ) | Change (%) |
| NO <sub>2</sub> (2002-2013 CHANGE)   |                                 | 6.6                       | -12.0            | 22.9                      | -35.2      |
| PM10 (2002-2013 CHANGE)  |                                 | 13.2                      | -3.8             | 20.9                      | -44.8      |
| PM2.5 (2010-2013 CHANGE)   |                                 | 7.6                       | -11.7            | 11.3                      | -10.1      |
| O <sub>3</sub> Daily eight-hour maximum values (2005-2013 CHANGE)              |                                 | 64.3                      | -7.1             | 75.6                      | 15.3       |

Source: Data of Extremadura provided by the autonomous community. Data of Spain provided by the Ministry of Agriculture, Food and the Environment. Data that are not comparable to other autonomous communities or to the average in Spain

| ENERGY. ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab.) |       |       |       |       |       |                      |
|--|-------|-------|-------|-------|-------|----------------------|
| Scope  | 2010  | 2011  | 2012  | 2013  | 2014  | 2010-2014 Change (%) |
| Extremadura  | 4.508 | 4.253 | 4.232 | 4.136 | 3.903 | -13.4                |
| Spain  | 5.863 | 5.735 | 5.652 | 5.540 | 5.519 | -5.9                 |

Source: data compiled by the authors from the REE and INE data

## Environmental reports

- 2012 Extremadura Environmental Report. [http://extremambiente.gobex.es/files/biblioteca\\_digital/INFORME\\_AMBIENTAL\\_EXTREMADURA\\_2012\\_2.pdf](http://extremambiente.gobex.es/files/biblioteca_digital/INFORME_AMBIENTAL_EXTREMADURA_2012_2.pdf)
- 2014 Greenhouse Gas Annual Report of Extremadura. [http://extremambiente.gobex.es/files/Calidad\\_y\\_Evaluacion/cambio\\_climatico/informe\\_emisiones\\_2014.pdf](http://extremambiente.gobex.es/files/Calidad_y_Evaluacion/cambio_climatico/informe_emisiones_2014.pdf)

## Links to websites of interest on the environment

- <http://extremambiente.gobex.es/>
- <http://observatorioclimaticoes/>
- <http://xtrgobex.es/repica/>

## Relevant data or information

- 7<sup>th</sup> and 8<sup>th</sup> Meeting of the Climate Change Observatory of Extremadura
- Approval of the Environmental Monitoring and Inspection Plan of Extremadura for 2014-2020
- Decree 208/2014, of 2 September, passing the Management Plan for Natural Resources in the International Tagus National Park
- Decree 55/2014, of 8 April, amending Decree 42/2012, of 23 March, establishing the regulations for the concession of subsidies for sustainable development in protected areas where protected species breed or in significant habitats and call for applications for such subsidies for the year 2012.
- Decree 63/2014, of 29 April, declaring 17 new singular trees in Extremadura and disqualifying some others.
- Resolution of 31 March 2014, of the General Secretariat, publicising the Partnership Agreement between the Regional Government of Extremadura and the "La Caixa" Foundation for the development of biodiversity conservation actions in Extremadura



## GALICIA

### Basic geographic and administrative information

**Statute of Autonomy:** Organic Act 1/81, of 6 April (BOE [Spanish State Gazette] 101, 28 April 1981)

**Area:** 29,575 km<sup>2</sup>

**Average coastline length:** 91,659 km (20.5% of the total)

**Capital:** Santiago de Compostela **Provinces:** 4 **Municipalities:** 315

**Population (2014):** 2,748,695 inhab.

**Population density (2014):** 92.9 inhab./km<sup>2</sup>

**Change in No. of inhabitants (%) 2000-2014:** 0.6 / **2013-2014:** -0.6

### Basic socio-economic information

| POPULATION BY SIZE OF MUNICIPALITY (%). YEAR 2014 |          |                |                 |                  |
|---|----------|----------------|-----------------|------------------|
| SCOPE   | < 10,000 | 10,001-100,000 | 100,001-500,000 | > 500,000 inhab. |
| Galicia   | 30.1     | 46.4           | 23.5            | 0.0              |
| Spain   | 20.9     | 39.6           | 23.6            | 16.0             |

| EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|--|-------------|----------|--------------|----------|
| SCOPE                                      | Agriculture | Industry | Construction | Services |
| Galicia                                    | 6.6         | 15.4     | 6.7          | 71.2     |
| Spain                                      | 4.2         | 13.7     | 5.7          | 76.3     |

| UNEMPLOYMENT RATE              |      |      |      |      |      |      |      |
|--------------------------------|------|------|------|------|------|------|------|
| 2007                           | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| 7.6                            | 8.6  | 12.4 | 15.3 | 17.3 | 20.5 | 22.0 | 21.7 |
| Average in Spain in 2014: 24.4 |      |      |      |      |      |      |      |



| GDP PER CAPITA AT MARKET PRICES. YEAR 2014 (1 <sup>st</sup> EST.) |          |           |                      |
|---|----------|-----------|----------------------|
| SCOPE   | €/inhab. | Spain=100 | 2013-2014 Change (%) |
| Galicia   | 19,954   | 87.6      | 0.3                  |
| Spain   | 22,780   | 100       | 1.2                  |

| GVA SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|-------------------------------------|-------------|----------|--------------|----------|
| SCOPE                               | Agriculture | Industry | Construction | Services |
| Galicia                             | 4.9         | 20.0     | 6.9          | 68.3     |
| Spain                               | 2.5         | 17.5     | 5.6          | 74.4     |

| GROSS DISPOSABLE HOUSEHOLD INCOME (2012) |          |           |                      |
|--|----------|-----------|----------------------|
| SCOPE                                    | €/inhab. | Spain=100 | Change 2011-2012 (%) |
| Galicia                                  | 13,180   | 91.4      | -2.2                 |
| Spain                                    | 14,414   | 100       | -3.1                 |
| Source: INE (for all variables)          |          |           |                      |

### Basic information on the status of the environment

| LAND. LAND DISTRIBUTION IN % (2013)   |               |                    |                      |   |                 |       |
|---|---------------|--------------------|----------------------|---|-----------------|-------|
| Scope   | Water surface | Artificial surface | Agricultural surface | Forest land and other semi-natural areas (excluding wetlands) | Wetland surface | Total |
| Galicia   | 0.7           | 2.7                | 27.8                 | 68.7  | 0.1             | 100.0 |
| Spain   | 0.8           | 2.5                | 41.9                 | 54.6  | 0.2             | 100.0 |
| Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment) |               |                    |                      |   |                 |       |

| NATURE. PROTECTED LAND AREA (2014)  |                      |      |             |      |                     |      |                                  |           |          |
|---|----------------------|------|-------------|------|---------------------|------|----------------------------------|-----------|----------|
| Scope   | Total protected area |      | PA          |      | Natura 2000 Network |      | Other international figures (ha) |           |          |
|   | ha                   | %    | ha          | %    | ha                  | %    | MAB                              | RAMSAR    | SPAMI    |
| Galicia   | 970,205.7            | 32.7 | 359,466.2   | 12.1 | 355,288.9           | 12.0 | 726,535.4                        | 4,563.4   | 0.0      |
| Spain   | 16,145,136.6         | 31.9 | 6,316,313.9 | 12.5 | 13,783,612.5        | 27.2 | 4,791,679.0                      | 281,220.5 | 51,857.9 |
| Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment) |                      |      |             |      |                     |      |                                  |           |          |

| NATURE. NUMBER AND AREA OF PROTECTED SPACES IN THE NATURA 2000 NETWORK: SCIs AND SPABs (2014):       |                               |                            |                          |                            |   |                             |                       |                             |
|--|-------------------------------|----------------------------|--------------------------|----------------------------|---|-----------------------------|-----------------------|-----------------------------|
| Scope  | Sites of Community Importance |                            |                          |                            | Special Protection Areas for Wild Birds |                             |                       |                             |
|  | Number of SCIs                | Total surface of SCIs (ha) | Land surface of SCIs (%) | Marine surface of SCIs (%) | Number of SPABs                         | Total surface of SPABs (ha) | Land surface SPAB (%) | Marine surface of SPABs (%) |
| Galicia  | 59                            | 375,735.4                  | 92.7                     | 7.3                        | 16.0                                    | 101,502.6                   | 87.1                  | 12.9                        |
| Spain  | 1,466                         | 15,777,555.2               | 74.4                     | 25.6                       | 643.0                                   | 15,318,654.4                | 66.1                  | 33.9                        |
| In hectares and percentages (percentages have been calculated over the total surface of each figure) |                               |                            |                          |                            |   |                             |                       |                             |
| Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)                          |                               |                            |                          |                            |   |                             |                       |                             |

| AGRICULTURE. ORGANIC FARMING AND IRRIGATION SURFACES (% OF SURFACE AND NUMBER OF OPERATORS IN FARMING) |  |  |   |
|--|--|--|---|
| Scope  | Percentage of irrigation surface with respect to utilised agricultural area (2014) | Percentage of organic farmland with respect to utilised agricultural area (2013) | Organic livestock farming: Number of farms (2013) |
| Galicia  | 3.7  | 1.8  | 212   |
| Spain  | 14.4   | 6.3  | 5,808   |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| WASTE. HOUSEHOLD WASTE PER INHABITANT (kg/inhab.) |       |       |       |       |                      |
|---|-------|-------|-------|-------|----------------------|
| Scope   | 2005  | 2010  | 2011  | 2012  | 2005-2012 Change (%) |
| Galicia   | 399.0 | 374.5 | 367.2 | 344.5 | -13.7                |
| Spain   | 502.8 | 421.7 | 406.8 | 396.5 | -21.1                |

Source: INE

| WATER. AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day) |      |      |      |      |      |      |      |      |                      |
|---|------|------|------|------|------|------|------|------|----------------------|
| Scope   | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2005-2012 Change (%) |
| Galicia   | 154  | 161  | 143  | 146  | 139  | 132  | 133  | 134  | -13.0                |
| Spain   | 170  | 164  | 157  | 154  | 149  | 144  | 142  | 137  | -19.4                |

Source: INE

| AIR. AVERAGE ANNUAL CONCENTRATION IN URBAN AREAS WITH OVER 50,000 INHABITANTS. |                                 |                                   |                  |                                   |            |
|--|---------------------------------|-----------------------------------|------------------|-----------------------------------|------------|
| SCOPE  | AVERAGE IN GALICIA              |                                   | AVERAGE IN SPAIN |                                   |            |
|  | POLLUTING AGENT / CHANGE PERIOD | 2013 ( $\mu\text{g}/\text{m}^3$ ) | Change (%)       | 2013 ( $\mu\text{g}/\text{m}^3$ ) | Change (%) |
| NO <sub>2</sub> (2001-2013 CHANGE)   |                                 | 18.0                              | 350.8            | 22.9                              | -35.2      |
| PM10 (2005-2013 CHANGE)  |                                 | 19.6                              | -10.7            | 20.9                              | -44.8      |
| PM2.5 (2010-2013 CHANGE)   |                                 | 12.1                              | -28.9            | 11.3                              | -10.1      |
| O <sub>3</sub> Daily eight-hour maximum values (2005-2013 CHANGE)              |                                 | 69.0                              | 43.8             | 75.6                              | 15.3       |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| ENERGY. ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab.) |       |       |       |       |       |                      |
|--|-------|-------|-------|-------|-------|----------------------|
| Scope  | 2010  | 2011  | 2012  | 2013  | 2014  | 2010-2014 Change (%) |
| Galicia  | 7148  | 7,097 | 7,016 | 7,130 | 7,077 | -1.0                 |
| Spain  | 5,863 | 5,735 | 5,652 | 5,540 | 5,519 | -5.9                 |

Source: data compiled by the authors from the REE and INE data

## Environmental reports

2013 Air Quality in Galicia Annual Report <http://www.meteogalicia.es/datosred/infoweb/caire/infornes/ANUAL/ES/Informe2013.pdf>

## Links to websites of interest on the environment

- Website of the Regional Ministry of the Environment, Territory and Infrastructure: <http://www.cmatixuntaes>
- Environmental Information System of Galicia (SIAM, Spanish acronym): <http://siam.cmatixuntaes/portada>
- Environmental Indicators: <http://siam.cmatixuntaes/indicadores-ambientais-introduccion>
- Meteogalicia: <http://www.meteogalicia.es>
- Air Quality in Galicia Reports: <http://www.meteogalicia.es/Caire/infornesCaire.action>
- Waste Information System: <http://sirga.cmatixuntaes>
- Approved plans and programmes on waste: <http://sirga.cmatixuntaes/plans-e-programas-sirga>
- Geographic information of Galicia: <http://mapas.xuntaes/portada>
- Geographic Viewer of Nature: <http://mapas.xuntaes/visores/conservaciondanatureza/>

## Relevant data or information

- 2010-2020 Programme for Urban Waste Management in Galicia.
  - 2013-2016 Construction and demolition waste management programme in Galicia.
  - 2013-2016 Industrial Waste Prevention Programme in Galicia.
- Available online <http://sirga.cmatixuntaes/plans-e-programas-sirga>



## LA RIOJA

### Basic geographic and administrative information

**Statute of Autonomy:** Organic Act 3/82, of 9 June (BOE [Spanish State Gazette] 146, 19 June 1982)

**Area:** 5,045 km<sup>2</sup>

**Capital:** Logroño **Provinces:** 1 **Municipalities:** 174

**Population (2014):** 319,002 inhab.

**Population density (2014):** 63.2 inhab./km<sup>2</sup>

**Change in No. of inhabitants (%) 2000-2014:** 20.8 / **2013-2014:** -0.9



### Basic socio-economic information

| POPULATION BY SIZE OF MUNICIPALITY (%). YEAR 2014 |          |                |                 |                  |
|---|----------|----------------|-----------------|------------------|
| SCOPE   | < 10,000 | 10,001-100,000 | 100,001-500,000 | > 500,000 inhab. |
| La Rioja  | 36.6     | 15.8           | 47.6            | 0.0              |
| Spain   | 20.9     | 39.6           | 23.6            | 16.0             |

| GDP PER CAPITA AT MARKET PRICES. YEAR 2014 (1 <sup>st</sup> EST.) |          |           |                      |
|---|----------|-----------|----------------------|
| SCOPE   | €/inhab. | Spain=100 | 2013-2014 Change (%) |
| La Rioja  | 24,998   | 109.7     | 2.4                  |
| Spain   | 22,780   | 100       | 1.2                  |

| EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|--|-------------|----------|--------------|----------|
| SCOPE                                      | Agriculture | Industry | Construction | Services |
| La Rioja                                   | 5.3         | 26.0     | 6.2          | 62.6     |
| Spain                                      | 4.2         | 13.7     | 5.7          | 76.3     |

| GVA SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|-------------------------------------|-------------|----------|--------------|----------|
| SCOPE                               | Agriculture | Industry | Construction | Services |
| La Rioja                            | 4.9         | 30.6     | 5.8          | 58.8     |
| Spain                               | 2.5         | 17.5     | 5.6          | 74.4     |

| UNEMPLOYMENT RATE              |      |      |      |      |      |      |      |
|--------------------------------|------|------|------|------|------|------|------|
| 2007                           | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| 5.8                            | 7.9  | 12.6 | 14.2 | 17.2 | 20.6 | 20.0 | 18.2 |
| Average in Spain in 2014: 24.4 |      |      |      |      |      |      |      |

| GROSS DISPOSABLE HOUSEHOLD INCOME (2012) |          |           |                      |
|--|----------|-----------|----------------------|
| SCOPE                                    | €/inhab. | Spain=100 | Change 2011-2012 (%) |
| La Rioja                                 | 14,851   | 103.0     | -3.1                 |
| Spain                                    | 14,414   | 100       | -3.1                 |

Source: INE (for all variables)

### Basic information on the status of the environment

| LAND. LAND DISTRIBUTION IN % (2013) |               |                    |                      |   |                 |       |
|-------------------------------------|---------------|--------------------|----------------------|---|-----------------|-------|
| Scope                               | Water surface | Artificial surface | Agricultural surface | Forest land and other semi-natural areas (excluding wetlands) | Wetland surface | Total |
| La Rioja                            | 0.4           | 2.4                | 35.5                 | 61.7  | 0.0             | 100.0 |
| Spain                               | 0.8           | 2.5                | 41.9                 | 54.6  | 0.2             | 100.0 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| NATURE. PROTECTED LAND AREA (2014) |                      |      |             |      |                     |      |                                  |           |          |
|------------------------------------|----------------------|------|-------------|------|---------------------|------|----------------------------------|-----------|----------|
| Scope                              | Total protected area |      | PA          |      | Natura 2000 Network |      | Other international figures (ha) |           |          |
|                                    | ha                   | %    | ha          | %    | ha                  | %    | MAB                              | RAMSAR    | SPAMI    |
| La Rioja                           | 258,214.8            | 51.2 | 167,624.4   | 33.3 | 167,529.7           | 33.2 | 119,822.1                        | 86.1      | 0.0      |
| Spain                              | 16,145,136.6         | 31.9 | 6,316,313.9 | 12.5 | 13,783,612.5        | 27.2 | 4,791,679.0                      | 281,220.5 | 51,857.9 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| NATURE. NUMBER AND AREA OF PROTECTED SPACES IN THE NATURA 2000 NETWORK: SCIs AND SPABs (2014): |                               |                            |                          |                            |   |                             |                       |                             |
|--|-------------------------------|----------------------------|--------------------------|----------------------------|---|-----------------------------|-----------------------|-----------------------------|
| Scope  | Sites of Community Importance |                            |                          |                            | Special Protection Areas for Wild Birds |                             |                       |                             |
|  | Number of SCIs                | Total surface of SCIs (ha) | Land surface of SCIs (%) | Marine surface of SCIs (%) | Number of SPABs                         | Total surface of SPABs (ha) | Land surface SPAB (%) | Marine surface of SPABs (%) |
| La Rioja   | 6                             | 167,529.7                  | 100.0                    | 0.0                        | 5.0                                     | 165,833.3                   | 100.0                 | 0.0                         |
| Spain  | 1,466                         | 15,777,555.2               | 74.4                     | 25.6                       | 643.0                                   | 15,318,654.4                | 66.1                  | 33.9                        |

In hectares and percentages (percentages have been calculated over the total surface of each figure) Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| AGRICULTURE. ORGANIC FARMING AND IRRIGATION SURFACES (% OF SURFACE AND NUMBER OF OPERATORS IN FARMING) |  |  |   |
|--|--|--|---|
| Scope  | Percentage of irrigation surface with respect to utilised agricultural area (2014) | Percentage of organic farmland with respect to utilised agricultural area (2013) | Organic livestock farming: Number of farms (2013) |
| La Rioja   | 23.9   | 2.0  | 10  |
| Spain  | 14.4   | 6.3  | 5,808   |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| WASTE. HOUSEHOLD WASTE PER INHABITANT (kg/inhab.) |       |       |       |       |                      |
|---|-------|-------|-------|-------|----------------------|
| Scope   | 2005  | 2010  | 2011  | 2012  | 2005-2012 Change (%) |
| La Rioja  | 521.8 | 358.9 | 352.9 | 339   | -35.0                |
| Spain   | 502.8 | 421.7 | 406.8 | 396.5 | -21.1                |

Source: INE

| WATER. AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day) |      |      |      |      |      |      |      |      |                      |
|---|------|------|------|------|------|------|------|------|----------------------|
| Scope   | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2005-2012 Change (%) |
| La Rioja  | 149  | 151  | 152  | 151  | 131  | 122  | 123  | 134  | -10.1                |
| Spain   | 170  | 164  | 157  | 154  | 149  | 144  | 142  | 137  | -19.4                |

Source: INE

| AIR. AVERAGE ANNUAL CONCENTRATION IN URBAN AREAS WITH OVER 50,000 INHABITANTS. |                                 |                           |                  |                           |            |
|--|---------------------------------|---------------------------|------------------|---------------------------|------------|
| SCOPE  | AVERAGE IN LA RIOJA             |                           | AVERAGE IN SPAIN |                           |            |
|  | POLLUTING AGENT / CHANGE PERIOD | 2013 (µg/m <sup>3</sup> ) | Change (%)       | 2013 (µg/m <sup>3</sup> ) | Change (%) |
| NO <sub>2</sub> (2001-2013 CHANGE)   |                                 | 5.1                       | -81.8            | 22.9                      | -35.2      |
| PM10 (2001-2013 CHANGE)  |                                 | 21.0                      | -53.3            | 20.9                      | -44.8      |
| PM2.5 (2010-2013 CHANGE)   |                                 | 9.0                       | 40.6             | 11.3                      | -10.1      |
| O <sub>3</sub> Daily eight-hour maximum values (2005-2013 CHANGE)              |                                 | 73.0                      | -9.9             | 75.6                      | 15.3       |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| ENERGY. ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab.) |       |       |       |       |       |                      |
|--|-------|-------|-------|-------|-------|----------------------|
| Scope  | 2010  | 2011  | 2012  | 2013  | 2014  | 2010-2014 Change (%) |
| La Rioja   | 5.550 | 5.412 | 5.277 | 5.163 | 5.173 | -6.8                 |
| Spain  | 5.863 | 5.735 | 5.652 | 5.540 | 5.519 | -5.9                 |

Source: data compiled by the authors from the REE and INE data

## Environmental reports

- <http://www.larioja.org/medioambiente>
- <http://www.larioja.org/residuos>
- <http://www.larioja.org/atmosfera>
- <http://www.larioja.org/care> (Consortio de aguas y residuos de La Rioja)
- <http://www.larioja.org/estadistica>

## Links to websites of interest on the environment

- The Regional Ministry of Agriculture, Farming and the Environment has passed the Decree on the application of the European Organic Farming Label in La Rioja. Decree 10/2004, of 14 March.
- Passing of Decree 44/2014, of 16 October, regulating waste production and management activities and the recording thereof <http://www.larioja.org/npRioja/default/defaultpage.jsp?dtab=809406&modelo=NA&norma=02040>
- La Grajera vineyard and winery has obtained the carbon footprint certification by AENOR.
- The Government of La Rioja participates in a Life project to improve the conservation of European mink in Spain.

## Relevant data or information

- Species Management Plans for Wild Flora and Fauna Declared as Endangered in the Autonomous Community of La Rioja (Androsela riojana, Portugal laurel, Ribes petraeum, the European mink, the little bustard, the Montagu's harrier, the lesser kestrel, the black-bellied sandgrouse, the pin-tailed sandgrouse, the Pyrenean desman, the Egyptian vulture, the freshwater blenny, partridge and the river crayfish (Decree 55/2014).
- 2020 Roadmap in non-ETS sectors in La Rioja (Climate Change Mitigation).
- 2014-2020 Rural Development Programme.
- 2014-2023 Action Plan and Ten-Year Report of the Biosphere Reserve of the Leza, Jubera, Cidacos and Alaham Valleys.



## MADRID

### Basic geographic and administrative information

**Statute of Autonomy:** Organic Act 3/83, of 25 February (BOE [Spanish State Gazette] 51, 01 March 1983)

**Area:** 8,028 km<sup>2</sup>

**Capital:** Madrid **Provinces:** 1 **Municipalities:** 179

**Population (2014):** 6,454,440 inhab.

**Population density (2014):** 804.0 inhab./km<sup>2</sup>

**Change in No. of inhabitants (%) 2000-2014:** 24.0 / **2013-2014:** -0.6



### Basic socio-economic information

#### POPULATION BY SIZE OF MUNICIPALITY (%). YEAR 2014

| SCOPE  | < 10,000 | 10,001-100,000 | 100,001-500,000 | > 500,000 inhab. |
|--------|----------|----------------|-----------------|------------------|
| Madrid | 5.8      | 22.0           | 23.2            | 49.0             |
| Spain  | 20.9     | 39.6           | 23.6            | 16.0             |

#### GDP PER CAPITA AT MARKET PRICES. YEAR 2014 (1<sup>st</sup> EST.)

| SCOPE  | €/inhab. | Spain=100 | 2013-2014 Change (%) |
|--------|----------|-----------|----------------------|
| Madrid | 31,004   | 136.1     | 1.1                  |
| Spain  | 22,780   | 100       | 1.2                  |

#### EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2014

| SCOPE  | Agriculture | Industry | Construction | Services |
|--------|-------------|----------|--------------|----------|
| Madrid | 0.5         | 8.9      | 5.0          | 85.6     |
| Spain  | 4.2         | 13.7     | 5.7          | 76.3     |

#### GVA SECTOR STRUCTURE (%). YEAR 2014

| SCOPE  | Agriculture | Industry | Construction | Services |
|--------|-------------|----------|--------------|----------|
| Madrid | 0.1         | 10.9     | 4.4          | 84.6     |
| Spain  | 2.5         | 17.5     | 5.6          | 74.4     |

#### UNEMPLOYMENT RATE

| 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|------|------|------|------|------|------|------|------|
| 6.2  | 8.6  | 13.9 | 15.8 | 16.3 | 18.5 | 19.8 | 18.7 |

Average in Spain in 2014: 24.4

#### GROSS DISPOSABLE HOUSEHOLD INCOME (2012)

| SCOPE  | €/inhab. | Spain=100 | Change 2011-2012 (%) |
|--------|----------|-----------|----------------------|
| Madrid | 17,980   | 124.7     | -3.1                 |
| Spain  | 14,414   | 100       | -3.1                 |

Source: INE (for all variables)

### Basic information on the status of the environment

#### LAND. LAND DISTRIBUTION IN % (2013)

| Scope  | Water surface | Artificial surface | Agricultural surface | Forest land and other semi-natural areas (excluding wetlands) | Wetland surface | Total |
|--------|---------------|--------------------|----------------------|---|-----------------|-------|
| Madrid | 0.9           | 16.4               | 28.0                 | 54.6  | 0.00            | 100.0 |
| Spain  | 0.8           | 2.5                | 41.9                 | 54.6  | 0.2             | 100.0 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

#### NATURE. PROTECTED LAND AREA (2014)

| Scope  | Total protected area |      | PA          |      | Natura 2000 Network |      | Other international figures (ha) |           |          |
|--------|----------------------|------|-------------|------|---------------------|------|----------------------------------|-----------|----------|
|        | ha                   | %    | ha          | %    | ha                  | %    | MAB                              | RAMSAR    | SPAMI    |
| Madrid | 330,361.2            | 41.2 | 120,892.1   | 15.1 | 319,587.6           | 39.8 | 62,014.0                         | 487.6     | 0.0      |
| Spain  | 16,145,136.6         | 31.9 | 6,316,313.9 | 12.5 | 13,783,612.5        | 27.2 | 4,791,679.0                      | 281,220.5 | 51,857.9 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

#### NATURE. NUMBER AND AREA OF PROTECTED SPACES IN THE NATURA 2000 NETWORK: SCIs AND SPABs (2014):

| Scope  | Sites of Community Importance |                            |                          |                            | Special Protection Areas for Wild Birds |                             |                       |                             |
|--------|-------------------------------|----------------------------|--------------------------|----------------------------|---|-----------------------------|-----------------------|-----------------------------|
|        | Number of SCIs                | Total surface of SCIs (ha) | Land surface of SCIs (%) | Marine surface of SCIs (%) | Number of SPABs                         | Total surface of SPABs (ha) | Land surface SPAB (%) | Marine surface of SPABs (%) |
| Madrid | 7                             | 319,585.3                  | 100.0                    | 0.0                        | 7.0                                     | 185,428.1                   | 100.0                 | 0.0                         |
| Spain  | 1,466                         | 15,777,555.2               | 74.4                     | 25.6                       | 643.0                                   | 15,318,654.4                | 66.1                  | 33.9                        |

In hectares and percentages (percentages have been calculated over the total surface of each figure)

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)



| AGRICULTURE. ORGANIC FARMING AND IRRIGATION SURFACES (% OF SURFACE AND NUMBER OF OPERATORS IN FARMING) |  |  |   |
|--|--|--|---|
| Scope  | Percentage of irrigation surface with respect to utilised agricultural area (2014) | Percentage of organic farmland with respect to utilised agricultural area (2013) | Organic livestock farming: Number of farms (2013) |
| Madrid   | 5.7  | 2.9  | 18  |
| Spain  | 14.4   | 6.3  | 5,808   |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| WASTE. HOUSEHOLD WASTE PER INHABITANT (kg/inhab.) |       |       |       |       |                      |
|---|-------|-------|-------|-------|----------------------|
| Scope   | 2005  | 2010  | 2011  | 2012  | 2005-2012 Change (%) |
| Madrid  | 556.6 | 343.4 | 328.6 | 313.1 | -43.7                |
| Spain   | 502.8 | 421.7 | 406.8 | 396.5 | -21.1                |

Source: INE

| WATER. AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day) |      |      |      |      |      |      |      |      |                      |
|---|------|------|------|------|------|------|------|------|----------------------|
| Scope   | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2005-2012 Change (%) |
| Madrid  | 163  | 150  | 150  | 144  | 145  | 140  | 141  | 135  | -17.2                |
| Spain   | 170  | 164  | 157  | 154  | 149  | 144  | 142  | 137  | -19.4                |

Source: INE

| AIR. AVERAGE ANNUAL CONCENTRATION IN URBAN AREAS WITH OVER 50,000 INHABITANTS. |                                 |                                   |                  |                                   |            |
|--|---------------------------------|-----------------------------------|------------------|-----------------------------------|------------|
| SCOPE  | AVERAGE IN MADRID               |                                   | AVERAGE IN SPAIN |                                   |            |
|  | POLLUTING AGENT / CHANGE PERIOD | 2013 ( $\mu\text{g}/\text{m}^3$ ) | Change (%)       | 2013 ( $\mu\text{g}/\text{m}^3$ ) | Change (%) |
| NO <sub>2</sub> (2001-2013 CHANGE)   |                                 | 31.5                              | -36.4            | 22.9                              | -35.2      |
| PM10 (2001-2013 CHANGE)  |                                 | 19.5                              | -34.8            | 20.9                              | -44.8      |
| PM2.5 (2010-2013 CHANGE)   |                                 | 10.4                              | -15.6            | 11.3                              | -10.1      |
| O <sub>3</sub> Daily eight-hour maximum values (2005-2013 CHANGE)              |                                 | 74.1                              | 27.8             | 75.6                              | 15.3       |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| ENERGY. ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab.) |       |       |       |       |       |                      |
|--|-------|-------|-------|-------|-------|----------------------|
| Scope  | 2010  | 2011  | 2012  | 2013  | 2014  | 2010-2014 Change (%) |
| Madrid   | 5.072 | 4.862 | 4.836 | 4.674 | 4.469 | -11.9                |
| Spain  | 5.863 | 5.735 | 5.652 | 5.540 | 5.519 | -5.9                 |

Source: data compiled by the authors from the REE and INE data

## Environmental reports

Situation Report "2014 Environmental Diagnosis of the Autonomous Community of Madrid", available at [www.madrid.org](http://www.madrid.org) > Services: Environmental Information. Access and queries > Related links: Reports on the status of the environment, or directly at the link: [http://www.madrid.org/cs/Satellite?c=CM\\_InfPractica\\_FA&cid=1142428063288&idConsejeria=1109266187260&idListCOnsj=1109265444710&idOrganismo=1109266227503&language=es&pagename=ComunidadMadrid%2FEstructura&pv=1354391184856&sm=1109266100977](http://www.madrid.org/cs/Satellite?c=CM_InfPractica_FA&cid=1142428063288&idConsejeria=1109266187260&idListCOnsj=1109265444710&idOrganismo=1109266227503&language=es&pagename=ComunidadMadrid%2FEstructura&pv=1354391184856&sm=1109266100977)

## Links to websites of interest on the environment

- Institutional Portal of the Autonomous Community of Madrid - access to: Topics > The Environment. <http://www.madrid.org>
- Compilation of Environmental Laws - RMLA (Spanish acronym). <http://www.madrid.org/legislacionambiental>
- Air Quality Control Network of the Autonomous Community of Madrid. <http://www.madrid.org/calidaddelaire>
- Environmental Cartography Viewer of the Autonomous Community of Madrid. [http://www.madrid.org/cartografia\\_ambiental](http://www.madrid.org/cartografia_ambiental)
- Madrid Birdwatching - Bird watching website. <http://madridbirdwatching.es>
- Livestock trails in the Autonomous Community of Madrid. <http://www.viaspecuariasdemadrid.org>

## Relevant data or information

- Implementation of National Park of Sierra de Guadarrama Bus, connecting the municipalities within the National Park or its Peripheral Protection Area and fostering the use of public transport among visitors, including a bilingual guide service which explains the value and resources of the Park.
- Declaration of 6 Sites of Community Importance (SCIs) as Specially Protected Areas (SPAS).
- First stage for the environmental recovery of the Boca Alta lagoon (Arganda del Rey). Estimated total cost: €14.5 million.
- Publication of the *Air Quality and Climate Change Strategy in the Autonomous Community of Madrid (2013-2020). Plan Azul +*.
- Incentivos Autotaxi Madrid incentive plan, fostering the progressive replacement of taxis in the Autonomous Community of Madrid with low NO<sub>x</sub> and CO<sub>2</sub> emission models: 451 beneficiaries.
- Incentive Plan for Efficient Light Commercial, Auxiliary and Service Vehicles of the Community of Madrid (PIVCEM-Madrid), fostering the progressive replacement of light commercial vehicles in the Community of Madrid with low NO<sub>x</sub> and CO<sub>2</sub> emission models: implementation.
- Commemoration of the 20<sup>th</sup> Anniversary of the Parque Regional del Sureste and the 40<sup>th</sup> Anniversary of the Declaration of Natural Site of Interest of the Hayedo de Montejo de la Sierra beech forest and the Documentation Centre of the Regional Ministry of the Environment and Land Planning.
- Preparation and publication of the *Guide of points of sale of organic products in the Community of Madrid*.



## MELILLA

### Basic geographic and administrative information

**Statute of Autonomy:** Organic Act 2/1995, of 13 March (BOE [Spanish State Gazette] 14-03-1995)

**Area:** 13 km<sup>2</sup>

**Average coastline length:** 9 km (0.1% of the total)

**Capital:** Melilla **Provinces:** 1 **Municipalities:** 1

**Population (2014):** 84,509 inhab.

**Population density (2014):** 6,500.7 inhab./km<sup>2</sup>

**Change in No. of inhabitants (%) 2000-2014:** 275 / **2013-2014:** 1



### Basic socio-economic information

| POPULATION BY SIZE OF MUNICIPALITY (%). YEAR 2014 |          |                |                 |                  |
|---|----------|----------------|-----------------|------------------|
| SCOPE   | < 10,000 | 10,001-100,000 | 100,001-500,000 | > 500,000 inhab. |
| Melilla   | 0.0      | 100.0          | 0.0             | 0.0              |
| Spain   | 20.9     | 39.6           | 23.6            | 16.0             |

| GDP PER CAPITA AT MARKET PRICES. YEAR 2014 (1 <sup>st</sup> EST.) |          |           |                      |
|---|----------|-----------|----------------------|
| SCOPE   | €/inhab. | Spain=100 | 2013-2014 Change (%) |
| Melilla   | 16,941   | 74.4      | 0.7                  |
| Spain   | 22,780   | 100       | 1.2                  |

| EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|--|-------------|----------|--------------|----------|
| SCOPE                                      | Agriculture | Industry | Construction | Services |
| Melilla                                    | 0.0         | 2.8      | 3.4          | 93.8     |
| Spain                                      | 4.2         | 13.7     | 5.7          | 76.3     |

| GVA SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|-------------------------------------|-------------|----------|--------------|----------|
| SCOPE                               | Agriculture | Industry | Construction | Services |
| Melilla                             | 0.1         | 5.2      | 5.1          | 89.6     |
| Spain                               | 2.5         | 17.5     | 5.6          | 74.4     |

| UNEMPLOYMENT RATE              |      |      |      |      |      |      |      |
|--------------------------------|------|------|------|------|------|------|------|
| 2007                           | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| 18.2                           | 20.0 | 23.5 | 22.8 | 22.4 | 26.9 | 32.5 | 28.4 |
| Average in Spain in 2014: 24.4 |      |      |      |      |      |      |      |

| GROSS DISPOSABLE HOUSEHOLD INCOME (2012) |          |           |                      |
|--|----------|-----------|----------------------|
| SCOPE                                    | €/inhab. | Spain=100 | Change 2011-2012 (%) |
| Melilla                                  | 10,933   | 75.8      | -8.1                 |
| Spain                                    | 14,414   | 100       | -3.1                 |
| Source: INE (for all variables)          |          |           |                      |

### Basic information on the status of the environment

| LAND. LAND DISTRIBUTION IN % (2013)   |               |                    |                      |   |                 |       |
|---|---------------|--------------------|----------------------|---|-----------------|-------|
| Scope   | Water surface | Artificial surface | Agricultural surface | Forest land and other semi-natural areas (excluding wetlands) | Wetland surface | Total |
| Melilla   | -             | -                  | -                    | -   | -               | -     |
| Spain   | 0.8           | 2.5                | 41.9                 | 54.6  | 0.2             | 100.0 |
| Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment) |               |                    |                      |   |                 |       |

| NATURE. PROTECTED LAND AREA (2014)  |                      |      |             |      |                     |      |                                  |           |          |
|---|----------------------|------|-------------|------|---------------------|------|----------------------------------|-----------|----------|
| Scope   | Total protected area |      | PA          |      | Natura 2000 Network |      | Other international figures (ha) |           |          |
|   | ha                   | %    | ha          | %    | ha                  | %    | MAB                              | RAMSAR    | SPAMI    |
| Melilla   | 46.1                 | 3.3  | 0.0         | 0.0  | 46.1                | 3.3  | 0.0                              | 0.0       | 0.0      |
| Spain   | 16,145,136.6         | 31.9 | 6,316,313.9 | 12.5 | 13,783,612.5        | 27.2 | 4,791,679.0                      | 281,220.5 | 51,857.9 |
| Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment) |                      |      |             |      |                     |      |                                  |           |          |

| NATURE. NUMBER AND AREA OF PROTECTED SPACES IN THE NATURA 2000 NETWORK: SCIs AND SPABs (2014):       |                               |                            |                          |                            |   |                             |                       |                             |
|--|-------------------------------|----------------------------|--------------------------|----------------------------|---|-----------------------------|-----------------------|-----------------------------|
| Scope  | Sites of Community Importance |                            |                          |                            | Special Protection Areas for Wild Birds |                             |                       |                             |
|  | Number of SCIs                | Total surface of SCIs (ha) | Land surface of SCIs (%) | Marine surface of SCIs (%) | Number of SPABs                         | Total surface of SPABs (ha) | Land surface SPAB (%) | Marine surface of SPABs (%) |
| Melilla  | 2                             | 91.6                       | 50.4                     | 49.6                       | 0.0                                     | 0.0                         | 0.0                   | 0.0                         |
| Spain  | 1,466                         | 15,777,555.2               | 74.4                     | 25.6                       | 643.0                                   | 15,318,654.4                | 66.1                  | 33.9                        |
| In hectares and percentages (percentages have been calculated over the total surface of each figure) |                               |                            |                          |                            |   |                             |                       |                             |
| Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)                          |                               |                            |                          |                            |   |                             |                       |                             |

| AGRICULTURE. ORGANIC FARMING AND IRRIGATION SURFACES (% OF SURFACE AND NUMBER OF OPERATORS IN FARMING) |  |  |   |
|--|--|--|---|
| Scope  | Percentage of irrigation surface with respect to utilised agricultural area (2014) | Percentage of organic farmland with respect to utilised agricultural area (2013) | Organic livestock farming: Number of farms (2013) |
| Melilla  | -  | -  | -   |
| Spain  | 14.4   | 6.3  | 5,808   |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| WASTE. HOUSEHOLD WASTE PER INHABITANT (kg/inhab.) |       |       |       |       |                      |
|---|-------|-------|-------|-------|----------------------|
| Scope   | 2005  | 2010  | 2011  | 2012  | 2005-2012 Change (%) |
| Ceuta and Melilla                                 | 586.2 | -     | -     | -     | -                    |
| Spain   | 502.8 | 421.7 | 406.8 | 396.5 | -21.1                |

Source: INE

| WATER. AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day) |      |      |      |      |      |      |      |      |                      |
|---|------|------|------|------|------|------|------|------|----------------------|
| Scope   | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2005-2012 Change (%) |
| Ceuta and Melilla   | 141  | 145  | 135  | 133  | 126  | 163  | 170  | 118  | -16.3                |
| Spain   | 170  | 164  | 157  | 154  | 149  | 144  | 142  | 137  | -19.4                |

Source: INE

| AIR. AVERAGE ANNUAL CONCENTRATION IN URBAN AREAS WITH OVER 50,000 INHABITANTS. |                                 |                           |                  |                           |            |
|--|---------------------------------|---------------------------|------------------|---------------------------|------------|
| SCOPE  | AVERAGE IN MELILLA              |                           | AVERAGE IN SPAIN |                           |            |
|  | POLLUTING AGENT / CHANGE PERIOD | 2013 (µg/m <sup>3</sup> ) | Change (%)       | 2013 (µg/m <sup>3</sup> ) | Change (%) |
| NO <sub>2</sub> (2001-2013 CHANGE)   |                                 | -                         | -                | 22.9                      | -35.2      |
| PM10 (2001-2013 CHANGE)  |                                 | -                         | -                | 20.9                      | -44.8      |
| PM2.5 (2010-2013 CHANGE)   |                                 | -                         | -                | 11.3                      | -10.1      |
| O <sub>3</sub> Daily eight-hour maximum values (2005-2013 CHANGE)              |                                 | -                         | -                | 75.6                      | 15.3       |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| ENERGY. ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab.) |       |       |       |       |       |                      |
|--|-------|-------|-------|-------|-------|----------------------|
| Scope  | 2010  | 2011  | 2012  | 2013  | 2014  | 2010-2014 Change (%) |
| Melilla  | 2.806 | 2.738 | 2.690 | 2.506 | 2.483 | -11.5                |
| Spain  | 5.863 | 5.735 | 5.652 | 5.540 | 5.519 | -5.9                 |

Source: data compiled by the authors from the REE and INE data

### Links to websites of interest on the environment

- <http://www.melillamedioambiente.com/>
- <http://www.remesaes/>



## MURCIA

### Basic geographic and administrative information

**Statute of Autonomy:** Organic Act 4/82, of 9 June (BOE [Spanish State Gazette] 146, 19 June 1982)

**Area:** 11,314 km<sup>2</sup>

**Average coastline length:** 290 km (3.6% of the total)

**Capital:** Murcia **Provinces:** 1 **Municipalities:** 45

**Population (2014):** 1,466,818 inhab.

**Population density (2014):** 129.7 inhab./km<sup>2</sup>

**Change in No. of inhabitants (%) 2000-2014:** 27.6 / **2013-2014:** -0.4



### Basic socio-economic information

| POPULATION BY SIZE OF MUNICIPALITY (%). YEAR 2014 |          |                |                 |                  |
|---|----------|----------------|-----------------|------------------|
| SCOPE   | < 10,000 | 10,001-100,000 | 100,001-500,000 | > 500,000 inhab. |
| Murcia  | 4.5      | 50.8           | 44.7            | 0.0              |
| Spain   | 20.9     | 39.6           | 23.6            | 16.0             |

| GDP PER CAPITA AT MARKET PRICES. YEAR 2014 (1 <sup>st</sup> EST.) |          |           |                      |
|---|----------|-----------|----------------------|
| SCOPE   | €/inhab. | Spain=100 | 2013-2014 Change (%) |
| Murcia  | 18,529   | 81.3      | 0.7                  |
| Spain   | 22,780   | 100       | 1.2                  |

| EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|--|-------------|----------|--------------|----------|
| SCOPE                                      | Agriculture | Industry | Construction | Services |
| Murcia                                     | 13.1        | 13.1     | 5.2          | 68.6     |
| Spain                                      | 4.2         | 13.7     | 5.7          | 76.3     |

| GVA SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|-------------------------------------|-------------|----------|--------------|----------|
| SCOPE                               | Agriculture | Industry | Construction | Services |
| Murcia                              | 4.4         | 18.1     | 6.4          | 71.2     |
| Spain                               | 2.5         | 17.5     | 5.6          | 74.4     |

| UNEMPLOYMENT RATE              |      |      |      |      |      |      |      |
|--------------------------------|------|------|------|------|------|------|------|
| 2007                           | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| 7.5                            | 12.4 | 20.3 | 22.9 | 25.0 | 27.6 | 29.0 | 26.6 |
| Average in Spain in 2014: 24.4 |      |      |      |      |      |      |      |

| GROSS DISPOSABLE HOUSEHOLD INCOME (2012) |          |           |                      |
|--|----------|-----------|----------------------|
| SCOPE                                    | €/inhab. | Spain=100 | Change 2011-2012 (%) |
| Murcia                                   | 11,679   | 81.0      | -3.3                 |
| Spain                                    | 14,414   | 100       | -3.1                 |

Source: INE (for all variables)

### Basic information on the status of the environment

| LAND. LAND DISTRIBUTION IN % (2013) |               |                    |                      |   |                 |       |
|-------------------------------------|---------------|--------------------|----------------------|---|-----------------|-------|
| Scope                               | Water surface | Artificial surface | Agricultural surface | Forest land and other semi-natural areas (excluding wetlands) | Wetland surface | Total |
| Murcia                              | 0.3           | 5.1                | 49.4                 | 45.1  | 0.1             | 100.0 |
| Spain                               | 0.8           | 2.5                | 41.9                 | 54.6  | 0.2             | 100.0 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| NATURE. PROTECTED LAND AREA (2014) |                      |      |             |      |                     |      |                                  |           |          |
|------------------------------------|----------------------|------|-------------|------|---------------------|------|----------------------------------|-----------|----------|
| Scope                              | Total protected area |      | PA          |      | Natura 2000 Network |      | Other international figures (ha) |           |          |
|                                    | ha                   | %    | ha          | %    | ha                  | %    | MAB                              | RAMSAR    | SPAMI    |
| Murcia                             | 276,402.0            | 24.4 | 61,769.7    | 5.5  | 266,675.8           | 23.6 | 0.0                              | 1,671.1   | 1,526.0  |
| Spain                              | 16,145,136.6         | 31.9 | 6,316,313.9 | 12.5 | 13,783,612.5        | 27.2 | 4,791,679.0                      | 281,220.5 | 51,857.9 |

Source: Data on Murcia: Region of Murcia. Directorate General for the Environment. Data on Spain: MAGRAMA. Data that are not comparable to other autonomous communities or to the average in Spain

| NATURE. NUMBER AND AREA OF PROTECTED SPACES IN THE NATURA 2000 NETWORK: SCIs AND SPABs (2014): |                               |                            |                          |                            |   |                             |                       |                             |
|--|-------------------------------|----------------------------|--------------------------|----------------------------|---|-----------------------------|-----------------------|-----------------------------|
| Scope  | Sites of Community Importance |                            |                          |                            | Special Protection Areas for Wild Birds |                             |                       |                             |
|  | Number of SCIs                | Total surface of SCIs (ha) | Land surface of SCIs (%) | Marine surface of SCIs (%) | Number of SPABs                         | Total surface of SPABs (ha) | Land surface SPAB (%) | Marine surface of SPABs (%) |
| Murcia   | 49                            | 194,329.5                  | 86.1                     | 13.9                       | 24.0                                    | 206,651.7                   | 93.3                  | 6.7                         |
| Spain  | 1,466                         | 15,777,555.2               | 74.4                     | 25.6                       | 643.0                                   | 15,318,654.4                | 66.1                  | 33.9                        |

In hectares and percentages (percentages have been calculated over the total surface of each figure). Sources: Data on Murcia: Region of Murcia. Directorate General for the Environment. Data on Spain: MAGRAMA. Data that are not comparable to other autonomous communities or to the average in Spain

| AGRICULTURE. ORGANIC FARMING AND IRRIGATION SURFACES (% OF SURFACE AND NUMBER OF OPERATORS IN FARMING) |  |  |   |
|--|--|--|---|
| Scope  | Percentage of irrigation surface with respect to utilised agricultural area (2014) | Percentage of organic farmland with respect to utilised agricultural area (2013) | Organic livestock farming: Number of farms (2013) |
| Murcia   | 34.2   | 11.3   | 2   |
| Spain  | 14.4   | 6.3  | 5,808   |

Source: Data on Murcia: Regional Ministry of Agriculture and Water Resources. Statistical Service (Method: Field surveys through County Offices). Data of Spain provided by the Ministry of Agriculture, Food and the Environment

| WASTE. HOUSEHOLD WASTE PER INHABITANT (kg/inhab.) |       |       |       |       |       |                      |
|---|-------|-------|-------|-------|-------|----------------------|
| Scope   | 2005  | 2010  | 2011  | 2012  | 2013  | 2005-2013 Change (%) |
| Murcia  | 503.4 | 498   | 394.7 | 394.8 | 381.5 | -24.2                |
| Spain   | 502.8 | 421.7 | 406.8 | 396.5 |       |                      |

Source: Data on Murcia: Region of Murcia. Directorate General for the Environment. Data on Spain: INE

| WATER. AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day) |      |      |      |      |      |      |      |      |                      |
|---|------|------|------|------|------|------|------|------|----------------------|
| Scope   | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2005-2012 Change (%) |
| Murcia  | 166  | 170  | 166  | 159  | 166  | 158  | 152  | 143  | -13.9                |
| Spain   | 170  | 164  | 157  | 154  | 149  | 144  | 142  | 137  | -19.4                |

Source: INE

| AIR. AVERAGE ANNUAL CONCENTRATION IN URBAN AREAS WITH OVER 50,000 INHABITANTS. |                                 |                           |                  |                           |            |
|--|---------------------------------|---------------------------|------------------|---------------------------|------------|
| SCOPE  | AVERAGE IN MURCIA               |                           | AVERAGE IN SPAIN |                           |            |
|  | POLLUTING AGENT / CHANGE PERIOD | 2013 (µg/m <sup>3</sup> ) | Change (%)       | 2013 (µg/m <sup>3</sup> ) | Change (%) |
| NO <sub>2</sub> (2001-2013 CHANGE)   |                                 | 22.5                      | 40.6             | 22.9                      | -35.2      |
| PM10 (2001-2013 CHANGE)  |                                 | 23.5                      | 38.2             | 20.9                      | -44.8      |
| PM2.5 (2010-2013 CHANGE)   |                                 | 9.6                       | -20.0            | 11.3                      | -10.1      |
| O <sub>3</sub> Daily eight-hour maximum values (2005-2013 CHANGE)              |                                 | 88.0                      | 1.4              | 75.6                      | 15.3       |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| ENERGY. ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab.) |       |       |       |       |       |                      |
|--|-------|-------|-------|-------|-------|----------------------|
| Scope  | 2010  | 2011  | 2012  | 2013  | 2014  | 2010-2014 Change (%) |
| Murcia   | 5.697 | 5.663 | 5.882 | 5.700 | 5.841 | 2.5                  |
| Spain  | 5.863 | 5.735 | 5.652 | 5.540 | 5.519 | -5.9                 |

Source: data compiled by the authors from the REE and INE data

## Environmental reports

- Reproduction census and control of rupicolous bird species (2014)
- Biological monitoring of steppe-land bird species (2014)
- Basic flora and fauna guide of the Natural Reserve of Cañaverosa (2014)
- Geological guide of the Regional Park of the Sierra de El Carche (2014)
- Information Manual for the Management of the Astragalus nitidiflorus habitat (2014)
- Natural Spaces in the Region of Murcia (2014)

## Links to websites of interest on the environment

- Murcianatural Portal: <http://www.murcianatural.carmes/web/guest>
- "Murcia enclave ambiental" Journal: <http://www.murciaenclaveambientales/>
- Eco-efficiency Portal: <http://www.worcces/presentacion.htm>
- Environmental Quality: <http://bit.ly/1fDmKl>
- Agriculture in Murcia as a CO<sub>2</sub> sink: <http://www.lessco2.es/lessco2.htm>
- Air Quality: <http://www.carmes/cmaot/calidadaire/portal/>

## Relevant data or information

- Draft Bill amending the functions, structure and schedule of calls by the Advisory Regional Council on the Environment. BORM [Official Gazette of the Region of Murcia] no. 19 (24/01/2014)
- Draft of Decree amending Decree no. 9/1994, of 4 February, on the incorporation and functioning of governing boards of protected natural areas. BORM [Official Gazette of the Region of Murcia] no. 19 (24/01/2014)
- Preliminary Draft of Degree for the approval of the recovery plans of the Bonelli's eagle, otters and the Spanish toothcarp. BORM [Official Gazette of the Region of Murcia] no. 59 (13/03/2014)
- Resolution of 8 April 2014, of the Secretary General of the Presidential Council, publishing the Agreement of 3 April 2014 declaring the lagoons of Moreras (Mazarrón) and Campotéjar (Molina de Segura) as Special Protected Areas for Birds (SPAB). BORM [Official Gazette of the Region of Murcia] no. 90 (21/04/2014)
- Preliminary Draft of the Decree to declare the white-headed duck as an endangered species and to approve the recovery plan for such species. BORM [Official Gazette of the Region of Murcia] no. 128 (05/06/2014)
- Order of 10 July 2014, of the Regional Ministry of Agriculture and Water, regulating recreational fishing for the 2014/2015 season and regulations for the conservation of aquatic fauna in the Autonomous Community of Murcia. BORM [Official Gazette of the Region of Murcia] no. 159 (12/07/2014)
- Decree-Act 2/2014, of 1 August, on tax, administrative simplification and public affair measures. BORM [Official Gazette of the Region of Murcia] no. 177 (02/08/2014)
- Act 8/2014, of 21 November, on Tax, Administrative Simplification and Public Affair Measures. BORM [Official Gazette of the Region of Murcia] no. 275 (28/11/2014)
- Decree no. 244/2014, of 19 December, passing recovery plans of the species Cistus heterophyllus, Erica arborea, Phoenicean Juniper, Narcissus nevadensis and Scrophularia Arguta. BORM [Official Gazette of the Region of Murcia] no. 297 (27/12/2014)



## NAVARRA

### Basic geographic and administrative information

**Statute of Autonomy:** Organic Act 13/82, of 10 August, on the reintegration and improvement of the Navarra Legal System (BOE [Spanish Official State Gazette] 195, of 16 August 1982)

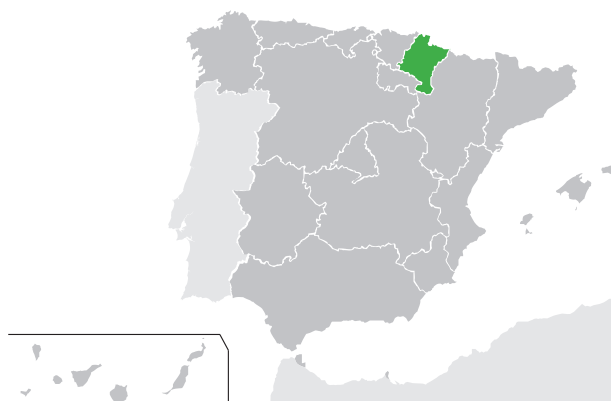
**Area:** 10,390 km<sup>2</sup>

**Capital:** Pamplona **Provinces:** 1 **Municipalities:** 272

**Population (2014):** 640,790 inhab.

**Population density (2014):** 61.7 inhab./km<sup>2</sup>

**Change in No. of inhabitants (%) 2000-2014:** 17.8 / **2013-2014:** -0.6



### Basic socio-economic information

#### POPULATION BY SIZE OF MUNICIPALITY (%). YEAR 2014

| SCOPE   | < 10,000 | 10,001-100,000 | 100,001-500,000 | > 500,000 inhab. |
|---------|----------|----------------|-----------------|------------------|
| Navarra | 45.5     | 23.8           | 30.6            | 0.0              |
| Spain   | 20.9     | 39.6           | 23.6            | 16.0             |

#### GDP PER CAPITA AT MARKET PRICES. YEAR 2014 (1<sup>st</sup> EST.)

| SCOPE   | €/inhab. | Spain=100 | 2013-2014 Change (%) |
|---------|----------|-----------|----------------------|
| Navarra | 28,124   | 123.5     | 1.2                  |
| Spain   | 22,780   | 100       | 1.2                  |

#### EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2014

| SCOPE   | Agriculture | Industry | Construction | Services |
|---------|-------------|----------|--------------|----------|
| Navarra | 4.8         | 25.5     | 5.4          | 64.4     |
| Spain   | 4.2         | 13.7     | 5.7          | 76.3     |

#### GVA SECTOR STRUCTURE (%). YEAR 2014

| SCOPE   | Agriculture | Industry | Construction | Services |
|---------|-------------|----------|--------------|----------|
| Navarra | 3.5         | 31.7     | 5.2          | 59.6     |
| Spain   | 2.5         | 17.5     | 5.6          | 74.4     |

#### UNEMPLOYMENT RATE

| 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|------|------|------|------|------|------|------|------|
| 4.7  | 6.8  | 10.8 | 11.9 | 13.0 | 16.2 | 17.9 | 15.7 |

Average in Spain in 2014: 24.4

#### GROSS DISPOSABLE HOUSEHOLD INCOME (2012)

| SCOPE   | €/inhab. | Spain=100 | Change 2011-2012 (%) |
|---------|----------|-----------|----------------------|
| Navarra | 17,733   | 123.0     | -3.9                 |
| Spain   | 14,414   | 100       | -3.1                 |

Source: INE (for all variables)

### Basic information on the status of the environment

#### LAND. LAND DISTRIBUTION IN % (2013)

| Scope   | Water surface | Artificial surface | Agricultural surface | Forest land and other semi-natural areas (excluding wetlands) | Wetland surface | Total |
|---------|---------------|--------------------|----------------------|---|-----------------|-------|
| Navarra | 0.5           | 2.6                | 39.7                 | 57.2  | 0.0             | 100.0 |
| Spain   | 0.8           | 2.5                | 41.9                 | 54.6  | 0.2             | 100.0 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

#### NATURE. PROTECTED LAND AREA (2014)

| Scope   | Total protected area |      | PA          |      | Natura 2000 Network |      | Other international figures (ha) |           |          |
|---------|----------------------|------|-------------|------|---------------------|------|----------------------------------|-----------|----------|
|         | ha                   | %    | ha          | %    | ha                  | %    | MAB                              | RAMSAR    | SPAMI    |
| Navarra | 277,139.5            | 26.7 | 84,785.9    | 8.2  | 269,517.0           | 26.0 | 39,285.3                         | 315.8     | 0.0      |
| Spain   | 16,145,136.6         | 31.9 | 6,316,313.9 | 12.5 | 13,783,612.5        | 27.2 | 4,791,679.0                      | 281,220.5 | 51,857.9 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

#### NATURE. NUMBER AND AREA OF PROTECTED SPACES IN THE NATURA 2000 NETWORK: SCIs AND SPABs (2014):

| Scope   | Sites of Community Importance |                            |                          |                            | Special Protection Areas for Wild Birds |                             |                       |                             |
|---------|-------------------------------|----------------------------|--------------------------|----------------------------|---|-----------------------------|-----------------------|-----------------------------|
|         | Number of SCIs                | Total surface of SCIs (ha) | Land surface of SCIs (%) | Marine surface of SCIs (%) | Number of SPABs                         | Total surface of SPABs (ha) | Land surface SPAB (%) | Marine surface of SPABs (%) |
| Navarra | 42                            | 269,441.4                  | 100.0                    | 0.0                        | 17.0                                    | 85,538.0                    | 100.0                 | 0.0                         |
| Spain   | 1,466                         | 15,777,555.2               | 74.4                     | 25.6                       | 643.0                                   | 15,318,654.4                | 66.1                  | 33.9                        |

In hectares and percentages (percentages have been calculated over the total surface of each figure)

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| AGRICULTURE. ORGANIC FARMING AND IRRIGATION SURFACES (% OF SURFACE AND NUMBER OF OPERATORS IN FARMING) |  |  |   |
|--|--|--|---|
| Scope  | Percentage of irrigation surface with respect to utilised agricultural area (2014) | Percentage of organic farmland with respect to utilised agricultural area (2013) | Organic livestock farming: Number of farms (2013) |
| Navarra  | 22.3   | 11.2   | 65  |
| Spain  | 14.4   | 6.3  | 5,808   |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| WASTE. HOUSEHOLD WASTE PER INHABITANT (kg/inhab.) |       |       |       |       |                      |
|---|-------|-------|-------|-------|----------------------|
| Scope   | 2005  | 2010  | 2011  | 2012  | 2005-2012 Change (%) |
| Navarra   | 511.5 | 317.2 | 305.2 | 294.8 | -42.4                |
| Spain   | 502.8 | 421.7 | 406.8 | 396.5 | -21.1                |

Source: INE

| WATER. AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day) |      |      |      |      |      |      |      |      |                      |
|---|------|------|------|------|------|------|------|------|----------------------|
| Scope   | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2005-2012 Change (%) |
| Navarra   | 137  | 131  | 126  | 131  | 135  | 128  | 135  | 129  | -5.8                 |
| Spain   | 170  | 164  | 157  | 154  | 149  | 144  | 142  | 137  | -19.4                |

Source: INE

| AIR. AVERAGE ANNUAL CONCENTRATION IN URBAN AREAS WITH OVER 50,000 INHABITANTS. |                           |            |                           |            |
|--|---------------------------|------------|---------------------------|------------|
| SCOPE  | AVERAGE IN NAVARRA        |            | AVERAGE IN SPAIN          |            |
|  | 2013 (µg/m <sup>3</sup> ) | Change (%) | 2013 (µg/m <sup>3</sup> ) | Change (%) |
| NO <sub>2</sub> (2001-2013 CHANGE)   | 25.3                      | -2.6       | 22.9                      | -35.2      |
| PM10 (2001-2013 CHANGE)  | 17.3                      | -49.0      | 20.9                      | -44.8      |
| PM2.5 (2010-2013 CHANGE)   | 9.2                       | -29.2      | 11.3                      | -10.1      |
| O <sub>3</sub> Daily eight-hour maximum values (2005-2013 CHANGE)              | 70.7                      | 9.3        | 75.6                      | 15.3       |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| ENERGY. ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab.) |       |       |       |       |       |                      |
|--|-------|-------|-------|-------|-------|----------------------|
| Scope  | 2010  | 2011  | 2012  | 2013  | 2014  | 2010-2014 Change (%) |
| Navarra  | 7.720 | 7.704 | 7.413 | 7.371 | 7.410 | -4.0                 |
| Spain  | 5.863 | 5.735 | 5.652 | 5.540 | 5.519 | -5.9                 |

Source: data compiled by the authors from the REE and INE data

## Environmental reports

- Navarra Environmental Status Report: [http://www.navarra.es/home\\_es/Temas/Medio+Ambiente/Informe+de+estado/](http://www.navarra.es/home_es/Temas/Medio+Ambiente/Informe+de+estado/)
- "Entornos" Journal: [http://www.navarra.es/home\\_es/Gobierno+de+Navarra/Organigrama/Los+departamentos/Desarrollo+Rural+Industria+Empleo+y+Medio+Ambiente/Publicaciones/Publicaciones+propias/Publicaciones+medio+ambiente/Publicaciones+Periodicas/boletines.htm](http://www.navarra.es/home_es/Gobierno+de+Navarra/Organigrama/Los+departamentos/Desarrollo+Rural+Industria+Empleo+y+Medio+Ambiente/Publicaciones/Publicaciones+propias/Publicaciones+medio+ambiente/Publicaciones+Periodicas/boletines.htm)
- Natura 2000 Network Collectables: [http://www.navarra.es/home\\_es/Gobierno+de+Navarra/Organigrama/Los+departamentos/Desarrollo+Rural+Industria+Empleo+y+Medio+Ambiente/Publicaciones/Publicaciones+propias/Publicaciones+medio+ambiente/Publicaciones+Periodicas/coleccionable+lic.htm](http://www.navarra.es/home_es/Gobierno+de+Navarra/Organigrama/Los+departamentos/Desarrollo+Rural+Industria+Empleo+y+Medio+Ambiente/Publicaciones/Publicaciones+propias/Publicaciones+medio+ambiente/Publicaciones+Periodicas/coleccionable+lic.htm)
- Journal on waste: [http://www.navarra.es/home\\_es/Temas/Medio+Ambiente/Residuos/Boletin+de+residuos.htm](http://www.navarra.es/home_es/Temas/Medio+Ambiente/Residuos/Boletin+de+residuos.htm)
- School reports. Nature Visitor Centres [http://www.navarra.es/home\\_es/Gobierno+de+Navarra/Organigrama/Los+departamentos/Desarrollo+Rural+Industria+Empleo+y+Medio+Ambiente/Publicaciones/Publicaciones+propias/Publicaciones+medio+ambiente/Publicaciones+Periodicas/boletin+escolar.htm](http://www.navarra.es/home_es/Gobierno+de+Navarra/Organigrama/Los+departamentos/Desarrollo+Rural+Industria+Empleo+y+Medio+Ambiente/Publicaciones/Publicaciones+propias/Publicaciones+medio+ambiente/Publicaciones+Periodicas/boletin+escolar.htm)
- Catalogues of Environmental Best Practice: [http://www.navarra.es/home\\_es/Gobierno+de+Navarra/Organigrama/Los+departamentos/Desarrollo+Rural+Industria+Empleo+y+Medio+Ambiente/Acciones/Planes+especificos/Acciones+medio+ambiente/Medio+Ambiente+Urbano/Premio+de+Buenas+Practicas.htm](http://www.navarra.es/home_es/Gobierno+de+Navarra/Organigrama/Los+departamentos/Desarrollo+Rural+Industria+Empleo+y+Medio+Ambiente/Acciones/Planes+especificos/Acciones+medio+ambiente/Medio+Ambiente+Urbano/Premio+de+Buenas+Practicas.htm)
- VAN ríos: [http://www.crana.org/es/voluntariado/documentacion\\_7/boletan-van-raos-voluntariado-los-raos-navarra](http://www.crana.org/es/voluntariado/documentacion_7/boletan-van-raos-voluntariado-los-raos-navarra)
- Report of the Directorate General of the Environment
- Environmental volunteering DVD

## Links to websites of interest on the environment

- Water: [http://www.navarra.es/home\\_es/Temas/Medio+Ambiente/Agua/](http://www.navarra.es/home_es/Temas/Medio+Ambiente/Agua/)
- Air Quality: [http://www.navarra.es/home\\_es/Temas/Medio+Ambiente/Calidad+del+aire/](http://www.navarra.es/home_es/Temas/Medio+Ambiente/Calidad+del+aire/)
- Hunting and fishing: [http://www.navarra.es/home\\_es/Temas/Medio+Ambiente/Caza+y+pesca/](http://www.navarra.es/home_es/Temas/Medio+Ambiente/Caza+y+pesca/)
- Environmental Assessment: [http://www.navarra.es/home\\_es/Temas/Medio+Ambiente/Evaluacion+ambiental/](http://www.navarra.es/home_es/Temas/Medio+Ambiente/Evaluacion+ambiental/)
- Habitat, fauna and flora: [http://www.navarra.es/home\\_es/Temas/Medio+Ambiente/Habitats/](http://www.navarra.es/home_es/Temas/Medio+Ambiente/Habitats/)
- Waste: [http://www.navarra.es/home\\_es/Temas/Medio+Ambiente/Residuos/](http://www.navarra.es/home_es/Temas/Medio+Ambiente/Residuos/)



## BASQUE COUNTRY

### Basic geographic and administrative information

**Statute of Autonomy:** Organic Act 3/79, of 18 December (BOE [Spanish State Gazette] 306, 22 December 1979)

**Area:** 7,230 km<sup>2</sup>

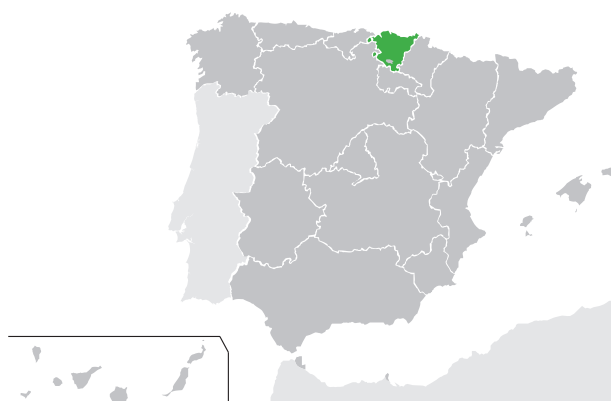
**Average coastline length:** 252 km (3.1% of the total)

**Capital:** Vitoria **Provinces:** 3 **Municipalities:** 251

**Population (2014):** 2,188,985 inhab.

**Population density (2014):** 302.6 inhab./km<sup>2</sup>

**Change in No. of inhabitants (%) 2000-2014:** 4.3 / **2013-2014:** -0.1



### Basic socio-economic information

| POPULATION BY SIZE OF MUNICIPALITY (%). YEAR 2014 |          |                |                 |                  |
|---|----------|----------------|-----------------|------------------|
| SCOPE   | < 10,000 | 10,001-100,000 | 100,001-500,000 | > 500,000 inhab. |
| Basque Country                                    | 20.1     | 39.9           | 40.0            | 0.0              |
| Spain   | 20.9     | 39.6           | 23.6            | 16.0             |

| GDP PER CAPITA AT MARKET PRICES. YEAR 2014 (1 <sup>st</sup> EST.) |          |           |                      |
|---|----------|-----------|----------------------|
| SCOPE   | €/inhab. | Spain=100 | 2013-2014 Change (%) |
| Basque Country  | 29,683   | 130.3     | 1.3                  |
| Spain   | 22,780   | 100       | 1.2                  |

| EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|--|-------------|----------|--------------|----------|
| SCOPE                                      | Agriculture | Industry | Construction | Services |
| Basque Country                             | 1.4         | 20.2     | 5.8          | 72.6     |
| Spain                                      | 4.2         | 13.7     | 5.7          | 76.3     |

| GVA SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|-------------------------------------|-------------|----------|--------------|----------|
| SCOPE                               | Agriculture | Industry | Construction | Services |
| Basque Country                      | 0.7         | 27.1     | 5.9          | 66.2     |
| Spain                               | 2.5         | 17.5     | 5.6          | 74.4     |

| UNEMPLOYMENT RATE              |      |      |      |      |      |      |      |
|--------------------------------|------|------|------|------|------|------|------|
| 2007                           | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| 6.2                            | 6.6  | 11.3 | 10.7 | 12.4 | 15.6 | 16.6 | 16.3 |
| Average in Spain in 2014: 24.4 |      |      |      |      |      |      |      |

| GROSS DISPOSABLE HOUSEHOLD INCOME (2012) |          |           |                      |
|--|----------|-----------|----------------------|
| SCOPE                                    | €/inhab. | Spain=100 | Change 2011-2012 (%) |
| Basque Country                           | 18,950   | 131.5     | -2.2                 |
| Spain                                    | 14,414   | 100       | -3.1                 |
| Source: INE (for all variables)          |          |           |                      |

### Basic information on the status of the environment

| LAND. LAND DISTRIBUTION IN % (2013)   |               |                    |                      |   |                 |       |
|---|---------------|--------------------|----------------------|---|-----------------|-------|
| Scope   | Water surface | Artificial surface | Agricultural surface | Forest land and other semi-natural areas (excluding wetlands) | Wetland surface | Total |
| Basque Country  | 0.6           | 6.4                | 24.9                 | 68.0  | 0.1             | 100.0 |
| Spain   | 0.8           | 2.5                | 41.9                 | 54.6  | 0.2             | 100.0 |
| Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment) |               |                    |                      |   |                 |       |

| NATURE. PROTECTED LAND AREA (2014)  |                      |      |             |      |                     |      |                                  |           |          |
|---|----------------------|------|-------------|------|---------------------|------|----------------------------------|-----------|----------|
| Scope   | Total protected area |      | PA          |      | Natura 2000 Network |      | Other international figures (ha) |           |          |
|   | ha                   | %    | ha          | %    | ha                  | %    | MAB                              | RAMSAR    | SPAMI    |
| Basque Country  | 164,578.6            | 22.8 | 98,887.3    | 13.7 | 145,394.1           | 20.1 | 21,774.8                         | 1,635.8   | 0.0      |
| Spain   | 16,145,136.6         | 31.9 | 6,316,313.9 | 12.5 | 13,783,612.5        | 27.2 | 4,791,679.0                      | 281,220.5 | 51,857.9 |
| Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment) |                      |      |             |      |                     |      |                                  |           |          |

| NATURE. NUMBER AND AREA OF PROTECTED SPACES IN THE NATURA 2000 NETWORK: SCIs AND SPABs (2014):       |                               |                            |                          |                            |   |                             |                       |                             |
|--|-------------------------------|----------------------------|--------------------------|----------------------------|---|-----------------------------|-----------------------|-----------------------------|
| Scope  | Sites of Community Importance |                            |                          |                            | Special Protection Areas for Wild Birds |                             |                       |                             |
|  | Number of SCIs                | Total surface of SCIs (ha) | Land surface of SCIs (%) | Marine surface of SCIs (%) | Number of SPABs                         | Total surface of SPABs (ha) | Land surface SPAB (%) | Marine surface of SPABs (%) |
| Basque Country   | 52                            | 134,940.7                  | 99.7                     | 0.3                        | 6.0                                     | 39,136.0                    | 96.4                  | 3.6                         |
| Spain  | 1,466                         | 15,777,555.2               | 74.4                     | 25.6                       | 643.0                                   | 15,318,654.4                | 66.1                  | 33.9                        |
| In hectares and percentages (percentages have been calculated over the total surface of each figure) |                               |                            |                          |                            |   |                             |                       |                             |
| Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)                          |                               |                            |                          |                            |   |                             |                       |                             |



| AGRICULTURE. ORGANIC FARMING AND IRRIGATION SURFACES (% OF SURFACE AND NUMBER OF OPERATORS IN FARMING) |  |  |   |
|--|--|--|---|
| Scope  | Percentage of irrigation surface with respect to utilised agricultural area (2014) | Percentage of organic farmland with respect to utilised agricultural area (2013) | Organic livestock farming: Number of farms (2013) |
| Basque Country   | 8.2  | 1.2  | 84  |
| Spain  | 14.4   | 6.3  | 5,808   |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| WASTE. HOUSEHOLD WASTE PER INHABITANT (kg/inhab.) |       |       |       |       |                      |
|---|-------|-------|-------|-------|----------------------|
| Scope   | 2005  | 2010  | 2011  | 2012  | 2005-2012 Change (%) |
| Basque Country                                    | 507.9 | 335.9 | 323.3 | 366.5 | -27.8                |
| Spain   | 502.8 | 421.7 | 406.8 | 396.5 | -21.1                |

Source: INE

| WATER. AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day) |      |      |      |      |      |      |      |      |                      |
|---|------|------|------|------|------|------|------|------|----------------------|
| Scope   | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2005-2012 Change (%) |
| Basque Country  | 141  | 130  | 125  | 139  | 126  | 122  | 117  | 119  | -15.6                |
| Spain   | 170  | 164  | 157  | 154  | 149  | 144  | 142  | 137  | -19.4                |

Source: INE

| AIR. AVERAGE ANNUAL CONCENTRATION IN URBAN AREAS WITH OVER 50,000 INHABITANTS. |                                 |                           |                  |                           |            |
|--|---------------------------------|---------------------------|------------------|---------------------------|------------|
| SCOPE  | AVERAGE IN THE BASQUE COUNTRY   |                           | AVERAGE IN SPAIN |                           |            |
|  | POLLUTING AGENT / CHANGE PERIOD | 2013 (µg/m <sup>3</sup> ) | Change (%)       | 2013 (µg/m <sup>3</sup> ) | Change (%) |
| NO <sub>2</sub> (2001-2013 CHANGE)   |                                 | 30.5                      | -17.3            | 22.9                      | -35.2      |
| PM10 (2001-2013 CHANGE)  |                                 | 14.5                      | -55.9            | 20.9                      | -44.8      |
| PM2.5 (2010-2013 CHANGE)   |                                 | 9.7                       | -12.0            | 11.3                      | -10.1      |
| O <sub>3</sub> Daily eight-hour maximum values (2005-2013 CHANGE)              |                                 | 66.0                      | 4.2              | 75.6                      | 15.3       |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| ENERGY. ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab.) |       |       |       |       |       |                      |
|--|-------|-------|-------|-------|-------|----------------------|
| Scope  | 2010  | 2011  | 2012  | 2013  | 2014  | 2010-2014 Change (%) |
| Basque Country   | 8.477 | 8.101 | 7.622 | 7.596 | 7.720 | -8.9                 |
| Spain  | 5.863 | 5.735 | 5.652 | 5.540 | 5.519 | -5.9                 |

Source: data compiled by the authors from the REE and INE data

## Environmental reports

- Environmental Profile: [http://www.ingurumena.ejgv.euskadi.eus/r49-5832/es/contenidos/libro/perfil\\_ambiental/es\\_doc/indice.html](http://www.ingurumena.ejgv.euskadi.eus/r49-5832/es/contenidos/libro/perfil_ambiental/es_doc/indice.html)
- 2020 Environmental Framework Programme: <http://www.ingurumena.ejgv.euskadi.eus/informacion/programa-marco-ambiental-2020/r49-5832/es/>
- Environmental Performance Index (EPI) Euskadi: [http://www.ingurumena.ejgv.euskadi.eus/r49-5832/es/contenidos/informe\\_estudio/epi/es\\_def/epi.html](http://www.ingurumena.ejgv.euskadi.eus/r49-5832/es/contenidos/informe_estudio/epi/es_def/epi.html)
- Environmental and territorial policy statistics: <http://www.ingurumena.ejgv.euskadi.eus/r49-estamapt/es/>

## Links to websites of interest on the environment

- [www.ingurumena.net](http://www.ingurumena.net)
- <http://www.geo.euskadi.eus/>

## Relevant data or information

- Estuarios del País Vasco "Best of the Best" LIFE Nature Projects 2014. [www.euskadi.eus/life\\_estuarios](http://www.euskadi.eus/life_estuarios) <http://ec.europa.eu/environment/life/bestprojects/bestnat2014/index.htm>
- The Agenda 21 programme for the Basque Country is among the 25 successful, qualified projects in the World Conference on Education for Sustainable Development. <http://www.unesco.org/new/en/unesco-world-conference-on-esd-2014/about-the-conference/programme-documents/exhibitions/>



## C. VALENCIANA

### Basic geographic and administrative information

**Statute of Autonomy:** Organic Act 1/2006, of 10 April, on the Reform of Organic Act 5/1982, of 1 July, on the Statute of Autonomy of the Comunidad Valenciana (BOE [Spanish State Gazette] 86, of 11 April 2006)

**Area:** 23,255 km<sup>2</sup>

**Average coastline length:** 532 km (6.6% of the total)

**Capital:** Valencia **Provinces:** 3 **Municipalities:** 542

**Population (2014):** 5,004,844 inhab.

**Population density (2014):** 215.2 inhab./km<sup>2</sup>

**Change in No. of inhabitants (%) 2000-2014:** 21.5 / **2013-2014:** -2.1

### Basic socio-economic information

| POPULATION BY SIZE OF MUNICIPALITY (%). YEAR 2014 |          |                |                 |                  |
|---|----------|----------------|-----------------|------------------|
| SCOPE   | < 10,000 | 10,001-100,000 | 100,001-500,000 | > 500,000 inhab. |
| Comunidad Valenciana                              | 17.7     | 51.9           | 14.7            | 15.7             |
| Spain   | 20.9     | 39.6           | 23.6            | 16.0             |

| EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|--|-------------|----------|--------------|----------|
| SCOPE                                      | Agriculture | Industry | Construction | Services |
| C. Valenciana                              | 3.0         | 16.6     | 5.7          | 74.7     |
| Spain                                      | 4.2         | 13.7     | 5.7          | 76.3     |

| UNEMPLOYMENT RATE              |      |      |      |      |      |      |      |
|--------------------------------|------|------|------|------|------|------|------|
| 2007                           | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| 8.7                            | 12.0 | 20.8 | 22.9 | 24.0 | 27.2 | 28.1 | 25.8 |
| Average in Spain in 2014: 24.4 |      |      |      |      |      |      |      |



| GDP PER CAPITA AT MARKET PRICES. YEAR 2014 (1 <sup>st</sup> EST.) |          |           |                      |
|---|----------|-----------|----------------------|
| SCOPE   | €/inhab. | Spain=100 | 2013-2014 Change (%) |
| C. Valenciana   | 20,073   | 88.1      | 1.9                  |
| Spain   | 22,780   | 100       | 1.2                  |

| GVA SECTOR STRUCTURE (%). YEAR 2014 |             |          |              |          |
|-------------------------------------|-------------|----------|--------------|----------|
| SCOPE                               | Agriculture | Industry | Construction | Services |
| C. Valenciana                       | 2.2         | 18.8     | 6.3          | 72.7     |
| Spain                               | 2.5         | 17.5     | 5.6          | 74.4     |

| GROSS DISPOSABLE HOUSEHOLD INCOME (2012) |          |           |                      |
|--|----------|-----------|----------------------|
| SCOPE                                    | €/inhab. | Spain=100 | Change 2011-2012 (%) |
| C. Valenciana                            | 12,846   | 89.1      | -3.8                 |
| Spain                                    | 14,414   | 100       | -3.1                 |

Source: INE (for all variables)

### Basic information on the status of the environment

| LAND. LAND DISTRIBUTION IN % (2013) |               |                    |                      |   |                 |       |
|-------------------------------------|---------------|--------------------|----------------------|---|-----------------|-------|
| Scope                               | Water surface | Artificial surface | Agricultural surface | Forest land and other semi-natural areas (excluding wetlands) | Wetland surface | Total |
| C. Valenciana                       | 0.8           | 5.3                | 39.4                 | 54.0  | 0.50            | 100.0 |
| Spain                               | 0.8           | 2.5                | 41.9                 | 54.6  | 0.2             | 100.0 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| NATURE. PROTECTED LAND AREA (2014) |                      |      |             |      |                     |      |                                  |           |          |
|------------------------------------|----------------------|------|-------------|------|---------------------|------|----------------------------------|-----------|----------|
| Scope                              | Total protected area |      | PA          |      | Natura 2000 Network |      | Other international figures (ha) |           |          |
|                                    | ha                   | %    | ha          | %    | ha                  | %    | MAB                              | RAMSAR    | SPAMI    |
| C. Valenciana                      | 914,056.0            | 39.3 | 241,583.3   | 10.4 | 872,054.9           | 37.5 | 0.0                              | 31,540.2  | 19.4     |
| Spain                              | 16,145,136.6         | 31.9 | 6,316,313.9 | 12.5 | 13,783,612.5        | 27.2 | 4,791,679.0                      | 281,220.5 | 51,857.9 |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| NATURE. NUMBER AND AREA OF PROTECTED SPACES IN THE NATURA 2000 NETWORK: SCIs AND SPABs (2014): |                               |                            |                          |                            |   |                             |                       |                             |
|--|-------------------------------|----------------------------|--------------------------|----------------------------|---|-----------------------------|-----------------------|-----------------------------|
| Scope  | Sites of Community Importance |                            |                          |                            | Special Protection Areas for Wild Birds |                             |                       |                             |
|  | Number of SCIs                | Total surface of SCIs (ha) | Land surface of SCIs (%) | Marine surface of SCIs (%) | Number of SPABs                         | Total surface of SPABs (ha) | Land surface SPAB (%) | Marine surface of SPABs (%) |
| C. Valenciana  | 93                            | 639,235.9                  | 97.5                     | 2.5                        | 40.0                                    | 741,894.7                   | 97.6                  | 2.4                         |
| Spain  | 1,466                         | 15,777,555.2               | 74.4                     | 25.6                       | 643.0                                   | 15,318,654.4                | 66.1                  | 33.9                        |

In hectares and percentages (percentages have been calculated over the total surface of each figure) Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| AGRICULTURE. ORGANIC FARMING AND IRRIGATION SURFACES (% OF SURFACE AND NUMBER OF OPERATORS IN FARMING) |  |  |   |
|--|--|--|---|
| Scope  | Percentage of irrigation surface with respect to utilised agricultural area (2014) | Percentage of organic farmland with respect to utilised agricultural area (2013) | Organic livestock farming: Number of farms (2013) |
| Comunidad Valenciana   | 40.0   | 7.4  | 28  |
| Spain  | 14.4   | 6.3  | 5,808   |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| WASTE. HOUSEHOLD WASTE PER INHABITANT (kg/inhab.) |       |       |       |       |                      |
|---|-------|-------|-------|-------|----------------------|
| Scope   | 2005  | 2010  | 2011  | 2012  | 2005-2012 Change (%) |
| Comunidad Valenciana                              | 486.8 | 386.2 | 379.0 | 370.6 | -23.9                |
| Spain   | 502.8 | 421.7 | 406.8 | 396.5 | -21.1                |

Source: INE

| WATER. AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day) |      |      |      |      |      |      |      |      |                      |
|---|------|------|------|------|------|------|------|------|----------------------|
| Scope   | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2005-2012 Change (%) |
| Comunidad Valenciana  | 178  | 192  | 186  | 189  | 174  | 157  | 152  | 160  | -10.1                |
| Spain   | 170  | 164  | 157  | 154  | 149  | 144  | 142  | 137  | -19.4                |

Source: INE

| AIR. AVERAGE ANNUAL CONCENTRATION IN URBAN AREAS WITH OVER 50,000 INHABITANTS. |                                 |                           |                  |                           |            |
|--|---------------------------------|---------------------------|------------------|---------------------------|------------|
| SCOPE  | AVERAGE OF C. VALENCIANA        |                           | AVERAGE IN SPAIN |                           |            |
|  | POLLUTING AGENT / CHANGE PERIOD | 2013 (µg/m <sup>3</sup> ) | Change (%)       | 2013 (µg/m <sup>3</sup> ) | Change (%) |
| NO <sub>2</sub> (2001-2013 CHANGE)   |                                 | 19.1                      | -36.4            | 22.9                      | -35.2      |
| PM10 (2001-2013 CHANGE)  |                                 | 16.2                      | -42.3            | 20.9                      | -44.8      |
| PM2.5 (2010-2013 CHANGE)   |                                 | 10.8                      | -14.8            | 11.3                      | -10.1      |
| O <sub>3</sub> Daily eight-hour maximum values (2005-2013 CHANGE)              |                                 | 80.4                      | 18.7             | 75.6                      | 15.3       |

Source: MAGRAMA (Spanish Ministry of Agriculture, Food and the Environment)

| ENERGY. ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab.) |       |       |       |       |       |                      |
|--|-------|-------|-------|-------|-------|----------------------|
| Scope  | 2010  | 2011  | 2012  | 2013  | 2014  | 2010-2014 Change (%) |
| C. Valenciana  | 5.453 | 5.320 | 5.193 | 5.110 | 5.236 | -4.0                 |
| Spain  | 5.863 | 5.735 | 5.652 | 5.540 | 5.519 | -5.9                 |

Source: data compiled by the authors from the REE and INE data

## Environmental reports

Territorial Strategy of the Comunidad Valenciana

## Links to websites of interest on the environment

- Regional Ministry of Infrastructures, Territory and the Environment: <http://www.citmagva.es>
- Biodiversity Data Bank: <http://bdb.citmagva.es>
- Territorial Forest Action Plan at the Comunidad Valenciana (PATFOR): <http://www.citmagva.es/web/medio-natural/patfor>
- Environmental Information and Documentation Centre (CIDAM): <http://www.citmagva.es/web/cidam>
- Natural Parks: <http://www.citmagva.es/web/parques-naturales>
- Territorial Strategy of the Comunidad Valenciana: [http://www.citmagva.es/estatico/areas/estrategia\\_territorial/index.htm](http://www.citmagva.es/estatico/areas/estrategia_territorial/index.htm)

## Relevant data or information

- Approval of the Act on Land Planning, Urban Planning and Landscaping of the Comunidad Valenciana.
- Approval of the Act on Environmental Prevention, Quality and Control of Activities in the Comunidad Valenciana.
- Approval of the Act on Livestock Trails in the Comunidad Valenciana.
- Approval of the Hunting Act in the Comunidad Valenciana.
- Arrangement of the Revision of the Territorial Action Plan on Flood Risk Prevention at the Comunidad Valenciana (PATRICOVA).

## GEOGRAPHIC AND ADMINISTRATIVE INFORMATION

**Area:** Ministry of Finance and Public Administrations. Query submitted online: Home / Areas / Policies at an Autonomous Community level / Basic Information on Autonomous Communities / Economic Analysis of Autonomous Communities> Indicators / Socio-Economic Indicators. Available at: [http://www.seap.minhap.es/es/areas/politica\\_autonomica/info\\_basica/2anaeco/indicador\\_por/indicadores.html](http://www.seap.minhap.es/es/areas/politica_autonomica/info_basica/2anaeco/indicador_por/indicadores.html)

**Population and population by size of municipality:** Spanish National Institute of Statistics (INE). Information on the website: Official data on population resulting from the revision of the Municipal Register as of 1 January 2014 (Royal Decree 1007/2014, of 5 December, which declares official the population figures resulting from the review of the Municipal Register of Inhabitants of 1 January 2014). The remaining years have been checked at the site: INEbase / Demography and population / Register. Population by municipality / Official Numbers of Population in Spanish Municipalities / Population by municipality, island, province and Autonomous Community / Official amount of population resulting from the revision of the Municipal Register as of 1 January/Summary by autonomous community: Revision of Municipal Register / 3.1 Population by autonomous community and city and sex.

**Number of province and municipality:** Information on the website: INEbase / National classifications / List of Municipalities, Provinces, Autonomous Communities and Autonomous Cities and their codes / List of municipalities and codes by province as of 01-01-2015.

**Population density (2014):** Preparation by the authors through the coefficient between the population in 2014 and the area of the autonomous community. See sources in previous variables (Population and Surface).

**Change in inhabitants:** Prepared by the authors with population data from 2000, 2013 and 2014.

**Coastline length:** Physical environment / Territory / Results / Main Results / Territory / Development of limits in Autonomous Communities and provinces / 1.4 Development of limits of Autonomous Communities and provinces.

## SOCIO-ECONOMIC INFORMATION

**Employment Sector Structure (people employed by activity):** Spanish National Institute of Statistics (INE). Checked in INEbase / Labour Market / Economic activity, employment and unemployment / Economically Active Population Survey / Annual results / 6.29 Employed by economic activity, sex and autonomous community / 6.31 Employed by economic sector, sex and autonomous community. Percentages with respect to the total of each community.

**Unemployment rates:** Spanish National Institute of Statistics (INE). Checked at INEbase. Labour Market / Economic activity, employment and unemployment / Economically Active Population Survey / Annual Results / 6.44 Employment rates by nationality, sex and autonomous community.

**GDP per capita and "Spain = 100" index:** Spanish National Institute of Statistics (INE). Checked at INEbase. National Accounts / Spanish Regional Accounts. 2010 Base / Functional approach. GDP and its components / Series / Last data published: Series 2010-2014 (27 March 2015).

**Regional structure of GVA (% in 2014):** Spanish National Institute of Statistics (INE). Checked at INEbase. Spanish Regional Accounting. 2010 Base / Functional approach. GDP and its components. Accounting series / Last data published: Series 2010/2014 (27 March 2015) / Gross Domestic Product at market prices and value added at basic prices by economic activity. Current prices. Chart 1/Spain and all of the Autonomous Communities (Extraction of information individually).

**Methodological Note:** Global values extracted have been obtained by adding the following:

- Agriculture: including Agriculture, farming, forestry and fishery.
- Industries: It includes extractive industries; manufacturing industries, electric power, gas, steam and air conditioning supplies; water supply, sewerage activities, waste management and decontamination.
- Construction: it includes construction:
- Services: it includes: Wholesale and retail commerce; repair of motor vehicles and motorcycles; transport and storage; hospitality, Information and communications; Financial and insurance activities, Real estate activities,

professional activities, scientific and technical activities; administrative activities and ancillary services, Public administration and defence; compulsory social security; education; healthcare activities and social services, and artistic, recreational and entertaining activities; repair of domestic appliances and other services.

**Gross disposable household income per capita:** Spanish National Institute of Statistics (INE). Checked at INEbase / National accounts / Spanish Regional Accounts / Economic Accounts / Spanish Regional Accounts. 2010 Base / Institutional approach. Balance of Household Income. Last data published: Series 2010-2012 (27 March 2015).

## INFORMATION ON THE STATUS OF THE ENVIRONMENT

### LAND

#### LAND DISTRIBUTION IN % (2013)

Data provided by the Nature Data Bank. Directorate-General for Environmental Quality and Assessment and Natural Environment. Provided by the update of the SIOSE with the updated data of forest and wetland areas obtained from the Forestry Map.

### NATURE

#### PROTECTED LAND AREA (2014)

*Ground surface per protected area (Protected Natural Areas, Natura 2000 Network, Areas protected by international instruments), by competent administration body.*

Ministry of Agriculture, Food and the Environment, 2015. Nature Databank. Sub-directorate General for the Natural Environment of the Directorate General of Quality and Environmental and Nature Assessment.

#### NUMBER AND AREA OF PROTECTED SPACES IN THE NATURA 2000 NETWORK: SCIs AND SPABs (2014):

*Number and surface of Protected Areas, Natura 2000 Network, SCIs and SPABs, by competent authority.*

Ministry of Agriculture, Food and the Environment, 2015. Nature Databank. Sub-directorate General for the Natural Environment of the Directorate General of Quality and Environmental and Nature Assessment.

### AGRICULTURE

#### ORGANIC FARMING AND IRRIGATION SURFACES (% OF SURFACE AND NUMBER OF OPERATORS IN FARMING)

This indicator accounts for three variables that are representative of agricultural activity:

- Percentage of irrigation surface with respect to utilised agricultural area in 2014.
- Percentage of organic farming surface with respect to utilised agricultural area in 2013.
- Number of organic farms in 2013

In these three cases, the source used are reports and surveys by the Ministry of Agriculture, Food and the Environment. In particular:

- Data of utilised surface and irrigation surface: Survey on surfaces and crop yield. Several years
- Organic farming surface and organic farms surface: Organic farming. 2013 Statistics

#### Methodological Notes:

- Utilised agricultural surface is made up by: crop cultivation, prairies and permanent pastures. It also corresponds to the surface registered as intended for organic farming.
- The legal framework governing organic farming activities has been established in Spain since 1989 by the Regulation for the General Designation of Organic Farming and, at a European level, by Regulation (EC) No. 834/2007 of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91 [Official Journal of the European Union of 20/7/2007].

## WASTE

### HOUSEHOLD WASTE PER INHABITANT (kg/inhab.)

*Amount of collected waste per capita by period, autonomous community and type of waste.*

Spanish National Institute of Statistics (INE). Information on the website: INEbase / Agriculture and environment / Environmental accounts / Urban waste indicators. Series 2002-2012 (population as of 1 January of each year, according to current population estimations) / Last modification: 03/10/2014 / 1.1 Amount of collected waste per capita by period, autonomous community and type of waste.

## WATER

### AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day)

*Indicators on water supply by autonomous community and autonomous cities, main indicators and year.*

Spanish National Institute of Statistics (INE). Information on the website: INEbase / Agriculture and environment / Environmental statistics / Environment / Environmental Indicators / Water indicators / Series 2004-2012 (population as of 1 January of each year, according to the estimations of current population). Last data: 15/10/2014 / 2.1 Indicators on water supply by main indicators, autonomous communities and autonomous cities and year / 2. Water volume registered to the Public Supply Network /2.1. Total water volume registered and distributed by user type / 2.1.1 A households

## AIR

### AVERAGE ANNUAL CONCENTRATION IN URBAN AREAS WITH OVER 50,000 INHABITANTS.

Air Quality Database. Directorate-General for Environmental Quality and Assessment and Natural Environment. MAGRAMA.

Methodological note: The indicator presents the annual average concentration of NO<sub>2</sub>, PM10 and PM2.5, along with daily eight-hour maximum values of O<sub>3</sub>. All of the above concentrations are calculated in urban areas, such being municipalities of over 50,000 inhabitants.

All stations with sufficient date have been taken into consideration (85% for daily and hourly exceedances and 50% for annual average concentrations). However, it is important to highlight that the average value obtained is a representation of the average situation of that polluting elements and there may be differences between that value and isolated situations that may occur in certain stations in different cities. The total number of stations taken into consideration for the calculation of indicators varies throughout the relevant period, and it also varies in the assessment of each variable, which is a relevant aspect which affects the final result.

## ENERGY

### ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab.)

Indicator calculated through the coefficient between the electric power demand data, supplied by the Spanish Electric Network (REE) and the population data resulting from the revision of the municipal Register as of 1 January of each year described above and obtained from the INE.

**Methodological Notes:** As an innovation, the data corresponding to consumption by end clients by autonomous communities have been included. This way, the amount of unknown variables to be estimated is significantly reduced and the estimations made are of better quality. However, the availability of these measures regarding end clients is not available until 10 months have lapsed. As compensation, the final demand by autonomous region and the losses of the system are estimated, thus allowing to calculate a provisional balance until measures are final.

## ENVIRONMENTAL REPORTS

Data provided by the autonomous community submitted by National Focal Points within the EIONET Network.

## LINKS TO WEBSITES OF INTEREST ON THE ENVIRONMENT OF THE AUTONOMOUS COMMUNITY

Data provided by the autonomous community submitted by National Focal Points within the EIONET Network.

## RELEVANT DATA OR INFORMATION

Data provided by the autonomous community submitted by National Focal Points within the EIONET Network.







# Part 4. APPENDICES

- I. Index of acronyms, abbreviations, units and clarifications**
- II. Thematic index of indicators**
- III. Contributions to report predaction and review**



## APPENDIX I

### INDEX OF ACRONYMS, ABBREVIATIONS, UNITS AND CLARIFICATIONS

|                   |  |
|-------------------|--|
| <b>AEMA / EEA</b> | Agencia Europea de Medio Ambiente / <i>European Environment Agency</i>   |
| <b>AEMET</b>      | Spanish State Meteorological Agency (Agencia Estatal de Meteorología)  |
| <b>AENA</b>       | Spanish Airports Authority (Aeropuertos Españoles y Navegación Aérea)  |
| <b>AEPLA</b>      | Trade Association for Plant Protection (Asociación Empresarial para la Protección de las Plantas)  |
| <b>AGE</b>        | General State Administration (Administración General del Estado)   |
| <b>ANFFE</b>      | National Association of Fertiliser Manufacturers (Asociación Nacional de Fabricantes de Fertilizantes)   |
| <b>ASPAPPEL</b>   | Association of Spanish Pulp, Paper and Cardboard Manufacturers (Asociación española de fabricantes de pasta, papel y cartón)   |
| <b>ATP</b>        | Public Transport Authority (Autoridad de Transporte Público)   |
| <b>BOE</b>        | Spanish Official State Gazette (Boletín Oficial del Estado)  |
| <b>ACs</b>        | Autonomous Communities   |
| <b>CE / EC</b>    | Comisión Europea / <i>European Commission</i>  |
| <b>CEDEX</b>      | Centre for Public Works Studies and Experimentation (Centro de Estudios y Experimentación de Obras Públicas)   |
| <b>CDTI</b>       | Centre for Industrial Technological Development  |
| <b>EEC</b>        | European Economic Community  |
| <b>RBA</b>        | River Basin Authorities  |
| <b>CIEMAT</b>     | Centre for Energy, Environmental and Technological Research  |
| <b>CITES</b>      | Convenio Internacional sobre el Comercio de Especies Amenazadas de Fauna y Flora Silvestres / <i>Convention on International Trade in Endangered Species of Wild Fauna and Flora</i> . |
| <b>CLC</b>        | <i>Corine Land Cover</i>   |
| <b>CNAE</b>       | National Classification of Economic Activities   |
| <b>CNE (a)</b>    | Spanish National Accounting  |
| <b>CNE (b)</b>    | National Energy Commission   |
| <b>CNMB</b>       | National Catalogue of Basic Materials  |
| <b>CNR / NRC</b>  | National Reference Centre of the EIONET Network / <i>National Reference Centre</i>   |
| <b>CTESIA</b>     | Centro Temático Europeo de Información y Análisis Espacial de la AEMA / <i>European Topic Centre on Spatial Information and Analysis (EEA)</i>   |
| <b>DG</b>         | Directorate-General  |
| <b>DGT</b>        | Directorate-General of Traffic   |
| <b>DPMT</b>       | Public Maritime-Terrestrial Domain   |
| <b>EBCC</b>       | Censo Europeo de Aves / <i>European Bird Census Council</i>  |
| <b>Ecoembes</b>   | Ecoembalajes España, S.A, non-profit organisation devoted to the recovery of packaging waste across Spain.   |
| <b>Ecovidrio</b>  | Non-profit association devoted to the management of glass packaging recycling from the waste deposited in recycling banks across Spain   |
| <b>EEMS</b>       | Spanish Sustainable Mobility Strategy  |
| <b>EEDS</b>       | Spanish Sustainable Development Strategy   |
| <b>EESUL</b>      | Spanish Strategy for Urban and Local Sustainability  |
| <b>EIONET</b>     | Red Europea de Información y Observación del Medio Ambiente de la AEMA / <i>Environmental Information and Observation Network</i>  |
| <b>EMAS</b>       | Sistema Comunitario de Gestión y Auditoría Ambiental / <i>Eco-Management and Audit Scheme</i>  |
| <b>EMAU</b>       | Urban Environment Strategy   |

|                      |  |
|----------------------|--|
| <b>EMEP/VAG/CAMP</b> | Programa de Cooperación de seguimiento y evaluación del Transporte a gran distancia de los contaminantes atmosféricos en Europa / Vigilancia Mundial de la Atmósfera/ Programa Integral de Control Atmosférico ( <i>European Monitoring Evaluation Programme, Global Atmospheric Watch</i> ) |
| <b>ENP</b>           | Protected Areas  |
| <b>EOH</b>           | Hotel Occupancy Survey   |
| <b>EPF</b>           | Survey on Family's Budgets   |
| <b>ESYRCE</b>        | Survey on Crop Areas and Yields  |
| <b>Eurostat</b>      | Statistical Office of the European Union   |
| <b>FAMILITUR</b>     | Survey on Spaniards' Tourist Movement (IET)  |
| <b>FAO</b>           | Organización de las Naciones Unidas para la Agricultura y la Alimentación / <i>Food and Agriculture Organization of the United Nations</i>   |
| <b>FEMP</b>          | Spanish Federation of Municipalities and Provinces   |
| <b>FEOGA</b>         | European Agricultural Guidance and Guarantee Fund  |
| <b>FFCC</b>          | Railways   |
| <b>FRONTUR</b>       | Tourist Movement on Borders  |
| <b>GBAORD</b>        | Estadísticas sobre créditos presupuestarios públicos de investigación y desarrollo / <i>Government budget and appropriations or outlays for R&amp;D</i>  |
| <b>GHG</b>           | Greenhouse Gases   |
| <b>HORECA</b>        | Hotel, Restaurant and Catering Sector  |
| <b>IDAE</b>          | Institute for Diversification and Energy Saving  |
| <b>IDF</b>           | Inventory of Forest Damage   |
| <b>IEEM</b>          | Spanish Inventory of Marine Species  |
| <b>IEHEM</b>         | Spanish Inventory of Marine Habitats and Species   |
| <b>IEP</b>           | Primary Energy Intensity   |
| <b>IEPNB</b>         | Spanish Inventory of Natural Heritage and Biodiversity   |
| <b>IET</b>           | Institute for Tourism Studies  |
| <b>IOEP</b>          | Index of occupancy of protected land spaces  |
| <b>IFN</b>           | National Forest Inventory  |
| <b>IGME</b>          | Geological and Mining Institute of Spain   |
| <b>IGN</b>           | National Geographic Institute  |
| <b>INE</b>           | National Institute of Statistics   |
| <b>INES</b>          | National Soil Erosion Inventory  |
| <b>IPCC</b>          | Panel Intergubernamental sobre el Cambio Climático / <i>Intergovernmental Panel on Climate Change</i>  |
| <b>IPI</b>           | Industrial Production Indices  |
| <b>IPPC</b>          | Prevención y Control Integrado de la Contaminación / <i>Integrated Pollution Prevention and Control</i>  |
| <b>JACUMAR</b>       | National Counselling Board for Marine Farming.   |
| <b>SICs</b>          | Sites of Community Interest  |
| <b>LULUCF</b>        | It refers to the information on the activities of "Uso del suelo, cambios de uso del suelo y selvicultura". English acronym of <i>Land Use, Land Use Change and Forestry</i>   |
| <b>MAB</b>           | Siglas en inglés del Programa Hombre y Biosfera ( <i>Man and Biosphere-MaB</i> )   |
| <b>MAGRAMA</b>       | Ministry of Agriculture, Food and the Environment  |
| <b>MER</b>           | Strategic Noise Map  |

|                     |   |
|---------------------|---|
| <b>MF</b>           | Ministry of Public Works  |
| <b>MINETUR</b>      | Ministry of Industry, Energy and Tourism  |
| <b>MSSSI</b>        | Ministry of Health, Social Services and Equality  |
| <b>NABS</b>         | Nomenclature for the analysis and comparison of science budgets and programmes  |
| <b>NÁYADE</b>       | National Bathing Water Information System   |
| <b>NEDIES</b>       | Sistema de Intercambio de Información sobre los desastres naturales y ambientales / <i>Natural and Environmental Disasters Information Exchange System</i>        |
| <b>NNUU/ UN</b>     | Naciones Unidas / <i>United Nations</i>   |
| <b>NTM</b>          | Total Material Requirement  |
| <b>OCDE / OECD</b>  | Organización para la Cooperación y el Desarrollo Económico / <i>Organisation for Economic Co-operation and Development</i> .                                      |
| <b>OEPM</b>         | Spanish Patents and Trademarks Office   |
| <b>OECC</b>         | Spanish Office for Climate Change   |
| <b>OMM</b>          | Metropolitan Mobility Observatory of Spain  |
| <b>WHO</b>          | World Health Organisation   |
| <b>OMT/UNWTO</b>    | Organización Mundial de Turismo / <i>World Tourism Organization</i>   |
| <b>NGO</b>          | Non-Governmental Organisation   |
| <b>ONS</b>          | National Drought Observatory  |
| <b>OOAA</b>         | Autonomous Bodies   |
| <b>OSE</b>          | Observatory of Sustainability in Spain  |
| <b>OSPAR</b>        | Oslo and Paris Convention on the Protection of the Northeast Atlantic   |
| <b>CAP</b>          | Common Agricultural Policy  |
| <b>PAES</b>         | Sustainable Energy Action Plans   |
| <b>PAND</b>         | National Action Programme to combat Desertification   |
| <b>PDRS</b>         | Rural Sustainable Development Plan  |
| <b>PECBM</b>        | Sistema de Seguimiento de Aves Comunes Pan Europeas / <i>Pan-European Common Bird Monitoring Escheme</i>  |
| <b>PEIT</b>         | Strategic Infrastructures and Transport Plan  |
| <b>PEPR</b>         | National Programme on Waste Prevention  |
| <b>PHE</b>          | Spanish Historical Heritage   |
| <b>GDP</b>          | Gross Domestic Product  |
| <b>PIN 2020</b>     | 2020 Industrial Policy Integral Plan  |
| <b>PITVI</b>        | Infrastructure, Transport and Housing Plan  |
| <b>PM</b>           | Particulate matter in the air   |
| <b>NP</b>           | National Park   |
| <b>PNCA</b>         | National Plan for Water Quality: Sanitation and Water Treatment (2007-2015)   |
| <b>PNIR</b>         | National Integrated Waste Management Plan (2008-2015)   |
| <b>PNOA</b>         | National Plan of Aerial Orthophotography  |
| <b>PNR</b>          | National Reform Plan  |
| <b>PNSD</b>         | National Plan on Sanitation and Water Treatment   |
| <b>PNUMA / UNEP</b> | Programa de las Naciones Unidas para el Medio Ambiente / <i>United Nations Environment Programme</i>  |
| <b>PORN</b>         | Management Plan for Natural Resources   |
| <b>CFP</b>          | Common Fisheries Policy   |
| <b>NPs</b>          | National Parks  |
| <b>PRUG</b>         | Master Plan for Use and Management  |
| <b>PTE</b>          | Equivalent Tourist Population   |
| <b>RAMSAR</b>       | City in Iran where the Convention on Wetlands of International Importance was signed in 1971. The wetlands declared by countries are included in the RAMSAR List. |
| <b>REPACAR</b>      | Spanish Association for Paper and Cardboard Recovery (Asociación Española de Recuperación de Papel y Cartón)  |

|                        |  |
|------------------------|--|
| <b>RIS</b>             | Estrategia de Especialización Inteligente en Investigación e Innovación / <i>Research and Innovation Smart Specialisation Strategy</i>   |
| <b>RMIP</b>            | Marine Reserves of Fishing Interest  |
| <b>RRD</b>             | Disaster Risk Reduction  |
| <b>UW</b>              | Urban Waste  |
| <b>RUSLE</b>           | <i>Revised Universal Soil Loss Equation</i>  |
| <b>SAU</b>             | Utilised/Usable Agricultural Area  |
| <b>SECEM</b>           | Spanish Society for the Study and Conservation of Mammals  |
| <b>SEO</b>             | Spanish Ornithological Society   |
| <b>SEPRONA</b>         | Nature Protection Service of the Spanish Guardia Civil   |
| <b>SICA</b>            | Basic Information System on Acoustic Pollution   |
| <b>SIG (a)</b>         | Sistema de Información Geográfica / <i>Geographic Information System (GIS)</i>   |
| <b>IMS</b>             | Integrated Management System   |
| <b>SIGNUS ECOVALOR</b> | Integrated Management System of Used Tyres   |
| <b>SCOPUS</b>          | Database including citations and bibliographic references by the publisher Elsevier  |
| <b>SIMPA</b>           | Precipitation-Contribution Simulation  |
| <b>SNAP</b>            | Nomenclatura de Actividades Contaminantes de la Atmósfera / <i>Selected Nomenclature for Air Pollution</i>   |
| <b>SNS</b>             | National Healthcare System   |
| <b>SOER 2005</b>       | EEA Report: "El medio ambiente europeo: estado y perspectivas 2005"/ <i>"State and Outlook on the Environment Report 2005"</i>   |
| <b>SOER 2010</b>       | EEA Report: "El medio ambiente en Europa: Estado y perspectivas 2010"/ <i>"The European Environment - State and Outlook 2010"</i>  |
| <b>SOER 2015</b>       | EEA Report: "El medio ambiente en Europa: Estado y perspectivas 2015"/ <i>"The European Environment: State and Outlook 2015 (SOER 2015)"</i>   |
| <b>SPCAN</b>           | Protection Service against Polluting Agents  |
| <b>UDS</b>             | Units  |
| <b>UE-15</b>           | Belgium, Denmark, Germany, Greece, Spain, France, Ireland, Italy, Luxembourg, The Netherlands, Austria, Portugal, Finland, Sweden, United Kingdom  |
| <b>UE-25</b>           | Belgium, Denmark, Germany, Greece, Spain, France, Ireland, Italy, Luxembourg, The Netherlands, Austria, Portugal, Finland, Sweden, United Kingdom, Hungary, Poland, Cyprus, Czech Republic, Estonia, Malta, Latvia, Lithuania, Slovenia, Slovakia. |
| <b>UE-27</b>           | UE 25+ Bulgaria and Romania  |
| <b>UE-28</b>           | UE 27 + Croatia  |
| <b>UICN / IUCN</b>     | Unión Mundial para la Naturaleza / <i>The World Conservation Union</i>   |
| <b>UV-B</b>            | Ultraviolet Radiations   |
| <b>GVA</b>             | Gross Value Added  |
| <b>VAG/GAW</b>         | Vigilancia Mundial de la Atmósfera / <i>Global Atmospheric Watch</i>   |
| <b>WISE</b>            | Sistema Europeo de Información de Agua / <i>Water Information System for Europe</i>  |
| <b>WWF</b>             | Fondo Mundial para la Naturaleza (WWF-España, en nuestro país) / <i>World Wide Fund for Nature</i>   |
| <b>ZEC/SAC</b>         | Special Areas of Conservation  |
| <b>ZEPA/SPAB</b>       | Special Protection Areas for Wild Birds  |
| <b>ZEPIM/SPAMIs</b>    | Specially Protected Areas of Mediterranean Importance  |

## SYMBOLS, UNITS AND CHEMICAL COMPOUNDS

|                  |   |
|------------------|---|
| €                | Euro  |
| €05              | Euro value at constant prices in 2005   |
| AOT 40           | Índice de superación del umbral de ozono/ <i>Amount Over Threshold</i>  |
| CCl <sub>4</sub> | Carbon Tetrachloride  |
| CFC              | Chlorofluorocarbon  |
| CH <sub>4</sub>  | Methane   |
| CO               | Carbon Monoxide   |
| CO <sub>2</sub>  | Carbon Dioxide  |
| POP              | Persistent Organic Pollutants   |
| VOC              | Volatile Organic Compounds  |
| COVNM            | Non-methane Volatile Organic Compounds  |
| dB               | Decibel. Measure of sound pressure level  |
| dB(A)            | Weighted decibels (A scale)   |
| DBO <sub>5</sub> | Five-day Biochemical Oxygen Demand  |
| COD              | Chemical Oxygen Demand  |
| GT               | <i>Grosse Tonnage</i> : Measure of tonnage of fishing vessels. In use since 1998 when it replaced <i>Gross Registered Tonnage</i> (GRT) |
| GWh              | Gigawatt/hour   |
| h                | Hour  |
| ha               | Hectare   |
| inhab            | Inhabitant  |
| HBFC             | Hydrobromofluorocarbon  |
| HCFC             | Hydrochlorofluorocarbon   |
| hm <sup>3</sup>  | Cubic hectometre  |
| kg               | Kilogram  |
| km               | Kilometre   |
| km <sup>2</sup>  | Square kilometre  |
| kteo             | Kilotonnes of oil equivalent  |
| kW               | Kilowatt  |
| kWh              | Kilowatt-hour   |
| l                | Litre   |
| L <sub>Aeq</sub> | Equivalent continuous A-weighted sound pressure level. Expressed in A-weighted decibels (A)   |
| L <sub>eq</sub>  | Equivalent continuous noise level. Expressed in dB  |
| L <sub>den</sub> | Day-evening night noise indicator (English acronym). Measured in dB   |
| L <sub>n</sub>   | Night-time noise indicator (English acronym). Measured in dB  |

|                                   |  |
|-----------------------------------|--|
| <b>mg</b>                         | Miligram   |
| <b>mt</b>                         | Metric tonnes  |
| <b>MW</b>                         | Megawatts  |
| <b>MWp</b>                        | Megawatt peak  |
| <b>MWt</b>                        | Megawatt thermal   |
| <b>m<sup>2</sup></b>              | Square metre   |
| <b>m<sup>3</sup></b>              | Cubic metre  |
| <b>N</b>                          | Nitrogen   |
| <b>NH<sub>3</sub></b>             | Ammonia  |
| <b>N<sub>2</sub>O</b>             | Nitrous oxide  |
| <b>NO<sub>x</sub></b>             | Nitrogen oxide   |
| <b>O<sub>3</sub></b>              | Ozone  |
| <b>P</b>                          | Phosphorous  |
| <b>PCB</b>                        | Polychlorinated biphenyl   |
| <b>PCT</b>                        | Polychlorinated terphenyl  |
| <b>PFC</b>                        | Perfluorocarbon  |
| <b>P<sub>2</sub>O<sub>5</sub></b> | Orthophosphates  |
| <b>PM10</b>                       | Particulate matter with a diameter of 10 microns or less   |
| <b>PM2.5</b>                      | Particulate matter with a diameter of 2.5 microns or less  |
| <b>ppm</b>                        | Parts per million  |
| <b>Ppmm</b>                       | Parts per thousand million   |
| <b>SF<sub>6</sub></b>             | Sulphur hexafluoride   |
| <b>SO<sub>2</sub></b>             | Sulphur dioxide  |
| <b>t</b>                          | Tonne  |
| <b>t-km</b>                       | Tonne kilometre. Unit of measurement of freight transport. It is calculated by multiplying the number of tonnes transported by the number of kilometres travelled          |
| <b>TJ</b>                         | Terajoule  |
| <b>GRT</b>                        | Gross Registered Tonne   |
| <b>v-km</b>                       | Passenger-kilometre. Unit of measurement used for passenger traffic. It is calculated by multiplying the annual number of passengers by the number of kilometres travelled |
| <b>µg</b>                         | Micrograms   |
| <b>&gt;</b>                       | More than  |
| <b>&lt;</b>                       | Less than  |
| <b>1,000 t</b>                    | Thousand tonnes  |

## CLARIFICATIONS

### Clarification 1.

The Spanish Official State Gazette (BOE) of Friday, 29 July 2005 publishes the Resolution dated 28 July 2005 of the Undersecretariat, which gives publicity to the Agreement of the Council of Ministers from 22 July 2005, approving the guidelines of technical regulations. Said resolution defines the official names of the Spanish Autonomous Communities and Cities under a Statute of Autonomy. The above mentioned official names are as per below, appearing in order of approval of the appropriate Statutes of Autonomy thereof:

Autonomous Community of the Basque Country or Euskadi  
Autonomous Community of Catalonia  
Autonomous Community of Galicia  
Autonomous Community of Andalusia  
Autonomous Community of Asturias  
Autonomous Community of Cantabria  
Autonomous Community of La Rioja  
Autonomous Community of Murcia  
Autonomous Community of Valencia  
Autonomous Community of Aragón  
Autonomous Community of Castilla-La Mancha  
Autonomous Community of the Canary Islands  
Autonomous Community of Navarra  
Autonomous Community of Extremadura  
Autonomous Community of the Balearic Islands  
Autonomous Community of Madrid  
Autonomous Community of Castilla y León  
Autonomous City of Ceuta  
Autonomous City of Melilla

Notwithstanding this regulation, throughout the development of the Environmental Profile of Spain, abbreviated references of the autonomous communities are likely to appear in the charts or tables, otherwise it would be much difficult to fit longer names in the text.



**Clarification 2.**

The location of the various autonomous communities across Spain is shown in the administrative map below.

**MAP IDENTIFYING AUTONOMOUS COMMUNITIES AND AUTONOMOUS CITIES IN SPAIN**

## APPENDIX II

### THEMATIC INDEX OF INDICATORS

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# Part 4. APPENDICES

- I. Index of acronyms, abbreviations, units and clarifications**
- II. Thematic index of indicators**
- III. Contributions to report predaction and review**



## APPENDIX I

### INDEX OF ACRONYMS, ABBREVIATIONS, UNITS AND CLARIFICATIONS

|                   |  |
|-------------------|--|
| <b>AEMA / EEA</b> | Agencia Europea de Medio Ambiente / <i>European Environment Agency</i>   |
| <b>AEMET</b>      | Spanish State Meteorological Agency (Agencia Estatal de Meteorología)  |
| <b>AENA</b>       | Spanish Airports Authority (Aeropuertos Españoles y Navegación Aérea)  |
| <b>AEPLA</b>      | Trade Association for Plant Protection (Asociación Empresarial para la Protección de las Plantas)  |
| <b>AGE</b>        | General State Administration (Administración General del Estado)   |
| <b>ANFFE</b>      | National Association of Fertiliser Manufacturers (Asociación Nacional de Fabricantes de Fertilizantes)   |
| <b>ASPAPPEL</b>   | Association of Spanish Pulp, Paper and Cardboard Manufacturers (Asociación española de fabricantes de pasta, papel y cartón)   |
| <b>ATP</b>        | Public Transport Authority (Autoridad de Transporte Público)   |
| <b>BOE</b>        | Spanish Official State Gazette (Boletín Oficial del Estado)  |
| <b>ACs</b>        | Autonomous Communities   |
| <b>CE / EC</b>    | Comisión Europea / <i>European Commission</i>  |
| <b>CEDEX</b>      | Centre for Public Works Studies and Experimentation (Centro de Estudios y Experimentación de Obras Públicas)   |
| <b>CDTI</b>       | Centre for Industrial Technological Development  |
| <b>EEC</b>        | European Economic Community  |
| <b>RBA</b>        | River Basin Authorities  |
| <b>CIEMAT</b>     | Centre for Energy, Environmental and Technological Research  |
| <b>CITES</b>      | Convenio Internacional sobre el Comercio de Especies Amenazadas de Fauna y Flora Silvestres / <i>Convention on International Trade in Endangered Species of Wild Fauna and Flora</i> . |
| <b>CLC</b>        | <i>Corine Land Cover</i>   |
| <b>CNAE</b>       | National Classification of Economic Activities   |
| <b>CNE (a)</b>    | Spanish National Accounting  |
| <b>CNE (b)</b>    | National Energy Commission   |
| <b>CNMB</b>       | National Catalogue of Basic Materials  |
| <b>CNR / NRC</b>  | National Reference Centre of the EIONET Network / <i>National Reference Centre</i>   |
| <b>CTESIA</b>     | Centro Temático Europeo de Información y Análisis Espacial de la AEMA / <i>European Topic Centre on Spatial Information and Analysis (EEA)</i>   |
| <b>DG</b>         | Directorate-General  |
| <b>DGT</b>        | Directorate-General of Traffic   |
| <b>DPMT</b>       | Public Maritime-Terrestrial Domain   |
| <b>EBCC</b>       | Censo Europeo de Aves / <i>European Bird Census Council</i>  |
| <b>Ecoembes</b>   | Ecoembalajes España, S.A, non-profit organisation devoted to the recovery of packaging waste across Spain.   |
| <b>Ecovidrio</b>  | Non-profit association devoted to the management of glass packaging recycling from the waste deposited in recycling banks across Spain   |
| <b>EEMS</b>       | Spanish Sustainable Mobility Strategy  |
| <b>EEDS</b>       | Spanish Sustainable Development Strategy   |
| <b>EESUL</b>      | Spanish Strategy for Urban and Local Sustainability  |
| <b>EIONET</b>     | Red Europea de Información y Observación del Medio Ambiente de la AEMA / <i>Environmental Information and Observation Network</i>  |
| <b>EMAS</b>       | Sistema Comunitario de Gestión y Auditoría Ambiental / <i>Eco-Management and Audit Scheme</i>  |
| <b>EMAU</b>       | Urban Environment Strategy   |



|                      |  |
|----------------------|--|
| <b>EMEP/VAG/CAMP</b> | Programa de Cooperación de seguimiento y evaluación del Transporte a gran distancia de los contaminantes atmosféricos en Europa / Vigilancia Mundial de la Atmósfera/ Programa Integral de Control Atmosférico ( <i>European Monitoring Evaluation Programme, Global Atmospheric Watch</i> ) |
| <b>ENP</b>           | Protected Areas  |
| <b>EOH</b>           | Hotel Occupancy Survey   |
| <b>EPF</b>           | Survey on Family's Budgets   |
| <b>ESYRCE</b>        | Survey on Crop Areas and Yields  |
| <b>Eurostat</b>      | Statistical Office of the European Union   |
| <b>FAMILITUR</b>     | Survey on Spaniards' Tourist Movement (IET)  |
| <b>FAO</b>           | Organización de las Naciones Unidas para la Agricultura y la Alimentación / <i>Food and Agriculture Organization of the United Nations</i>   |
| <b>FEMP</b>          | Spanish Federation of Municipalities and Provinces   |
| <b>FEOGA</b>         | European Agricultural Guidance and Guarantee Fund  |
| <b>FFCC</b>          | Railways   |
| <b>FRONTUR</b>       | Tourist Movement on Borders  |
| <b>GBAORD</b>        | Estadísticas sobre créditos presupuestarios públicos de investigación y desarrollo / <i>Government budget and appropriations or outlays for R&amp;D</i>  |
| <b>GHG</b>           | Greenhouse Gases   |
| <b>HORECA</b>        | Hotel, Restaurant and Catering Sector  |
| <b>IDAE</b>          | Institute for Diversification and Energy Saving  |
| <b>IDF</b>           | Inventory of Forest Damage   |
| <b>IEEM</b>          | Spanish Inventory of Marine Species  |
| <b>IEHEM</b>         | Spanish Inventory of Marine Habitats and Species   |
| <b>IEP</b>           | Primary Energy Intensity   |
| <b>IEPNB</b>         | Spanish Inventory of Natural Heritage and Biodiversity   |
| <b>IET</b>           | Institute for Tourism Studies  |
| <b>IOEP</b>          | Index of occupancy of protected land spaces  |
| <b>IFN</b>           | National Forest Inventory  |
| <b>IGME</b>          | Geological and Mining Institute of Spain   |
| <b>IGN</b>           | National Geographic Institute  |
| <b>INE</b>           | National Institute of Statistics   |
| <b>INES</b>          | National Soil Erosion Inventory  |
| <b>IPCC</b>          | Panel Intergubernamental sobre el Cambio Climático / <i>Intergovernmental Panel on Climate Change</i>  |
| <b>IPI</b>           | Industrial Production Indices  |
| <b>IPPC</b>          | Prevención y Control Integrado de la Contaminación / <i>Integrated Pollution Prevention and Control</i>  |
| <b>JACUMAR</b>       | National Counselling Board for Marine Farming.   |
| <b>SICs</b>          | Sites of Community Interest  |
| <b>LULUCF</b>        | It refers to the information on the activities of "Uso del suelo, cambios de uso del suelo y selvicultura". English acronym of <i>Land Use, Land Use Change and Forestry</i>   |
| <b>MAB</b>           | Siglas en inglés del Programa Hombre y Biosfera ( <i>Man and Biosphere-MaB</i> )   |
| <b>MAGRAMA</b>       | Ministry of Agriculture, Food and the Environment  |
| <b>MER</b>           | Strategic Noise Map  |

|                     |   |
|---------------------|---|
| <b>MF</b>           | Ministry of Public Works  |
| <b>MINETUR</b>      | Ministry of Industry, Energy and Tourism  |
| <b>MSSSI</b>        | Ministry of Health, Social Services and Equality  |
| <b>NABS</b>         | Nomenclature for the analysis and comparison of science budgets and programmes  |
| <b>NÁYADE</b>       | National Bathing Water Information System   |
| <b>NEDIES</b>       | Sistema de Intercambio de Información sobre los desastres naturales y ambientales / <i>Natural and Environmental Disasters Information Exchange System</i>        |
| <b>NNUU/ UN</b>     | Naciones Unidas / <i>United Nations</i>   |
| <b>NTM</b>          | Total Material Requirement  |
| <b>OCDE / OECD</b>  | Organización para la Cooperación y el Desarrollo Económico / <i>Organisation for Economic Co-operation and Development</i> .                                      |
| <b>OEPM</b>         | Spanish Patents and Trademarks Office   |
| <b>OECC</b>         | Spanish Office for Climate Change   |
| <b>OMM</b>          | Metropolitan Mobility Observatory of Spain  |
| <b>WHO</b>          | World Health Organisation   |
| <b>OMT/UNWTO</b>    | Organización Mundial de Turismo / <i>World Tourism Organization</i>   |
| <b>NGO</b>          | Non-Governmental Organisation   |
| <b>ONS</b>          | National Drought Observatory  |
| <b>OOAA</b>         | Autonomous Bodies   |
| <b>OSE</b>          | Observatory of Sustainability in Spain  |
| <b>OSPAR</b>        | Oslo and Paris Convention on the Protection of the Northeast Atlantic   |
| <b>CAP</b>          | Common Agricultural Policy  |
| <b>PAES</b>         | Sustainable Energy Action Plans   |
| <b>PAND</b>         | National Action Programme to combat Desertification   |
| <b>PDRS</b>         | Rural Sustainable Development Plan  |
| <b>PECBM</b>        | Sistema de Seguimiento de Aves Comunes Pan Europeas / <i>Pan-European Common Bird Monitoring Escheme</i>  |
| <b>PEIT</b>         | Strategic Infrastructures and Transport Plan  |
| <b>PEPR</b>         | National Programme on Waste Prevention  |
| <b>PHE</b>          | Spanish Historical Heritage   |
| <b>GDP</b>          | Gross Domestic Product  |
| <b>PIN 2020</b>     | 2020 Industrial Policy Integral Plan  |
| <b>PITVI</b>        | Infrastructure, Transport and Housing Plan  |
| <b>PM</b>           | Particulate matter in the air   |
| <b>NP</b>           | National Park   |
| <b>PNCA</b>         | National Plan for Water Quality: Sanitation and Water Treatment (2007-2015)   |
| <b>PNIR</b>         | National Integrated Waste Management Plan (2008-2015)   |
| <b>PNOA</b>         | National Plan of Aerial Orthophotography  |
| <b>PNR</b>          | National Reform Plan  |
| <b>PNSD</b>         | National Plan on Sanitation and Water Treatment   |
| <b>PNUMA / UNEP</b> | Programa de las Naciones Unidas para el Medio Ambiente / <i>United Nations Environment Programme</i>  |
| <b>PORN</b>         | Management Plan for Natural Resources   |
| <b>CFP</b>          | Common Fisheries Policy   |
| <b>NPs</b>          | National Parks  |
| <b>PRUG</b>         | Master Plan for Use and Management  |
| <b>PTE</b>          | Equivalent Tourist Population   |
| <b>RAMSAR</b>       | City in Iran where the Convention on Wetlands of International Importance was signed in 1971. The wetlands declared by countries are included in the RAMSAR List. |
| <b>REPACAR</b>      | Spanish Association for Paper and Cardboard Recovery (Asociación Española de Recuperación de Papel y Cartón)  |

|                        |  |
|------------------------|--|
| <b>RIS</b>             | Estrategia de Especialización Inteligente en Investigación e Innovación / <i>Research and Innovation Smart Specialisation Strategy</i>   |
| <b>RMIP</b>            | Marine Reserves of Fishing Interest  |
| <b>RRD</b>             | Disaster Risk Reduction  |
| <b>UW</b>              | Urban Waste  |
| <b>RUSLE</b>           | <i>Revised Universal Soil Loss Equation</i>  |
| <b>SAU</b>             | Utilised/Usable Agricultural Area  |
| <b>SECEM</b>           | Spanish Society for the Study and Conservation of Mammals  |
| <b>SEO</b>             | Spanish Ornithological Society   |
| <b>SEPRONA</b>         | Nature Protection Service of the Spanish Guardia Civil   |
| <b>SICA</b>            | Basic Information System on Acoustic Pollution   |
| <b>SIG (a)</b>         | Sistema de Información Geográfica / <i>Geographic Information System (GIS)</i>   |
| <b>IMS</b>             | Integrated Management System   |
| <b>SIGNUS ECOVALOR</b> | Integrated Management System of Used Tyres   |
| <b>SCOPUS</b>          | Database including citations and bibliographic references by the publisher Elsevier  |
| <b>SIMPA</b>           | Precipitation-Contribution Simulation  |
| <b>SNAP</b>            | Nomenclatura de Actividades Contaminantes de la Atmósfera / <i>Selected Nomenclature for Air Pollution</i>   |
| <b>SNS</b>             | National Healthcare System   |
| <b>SOER 2005</b>       | EEA Report: "El medio ambiente europeo: estado y perspectivas 2005"/ <i>"State and Outlook on the Environment Report 2005"</i>   |
| <b>SOER 2010</b>       | EEA Report: "El medio ambiente en Europa: Estado y perspectivas 2010"/ <i>"The European Environment - State and Outlook 2010"</i>  |
| <b>SOER 2015</b>       | EEA Report: "El medio ambiente en Europa: Estado y perspectivas 2015"/ <i>"The European Environment: State and Outlook 2015 (SOER 2015)"</i>   |
| <b>SPCAN</b>           | Protection Service against Polluting Agents  |
| <b>UDS</b>             | Units  |
| <b>UE-15</b>           | Belgium, Denmark, Germany, Greece, Spain, France, Ireland, Italy, Luxembourg, The Netherlands, Austria, Portugal, Finland, Sweden, United Kingdom  |
| <b>UE-25</b>           | Belgium, Denmark, Germany, Greece, Spain, France, Ireland, Italy, Luxembourg, The Netherlands, Austria, Portugal, Finland, Sweden, United Kingdom, Hungary, Poland, Cyprus, Czech Republic, Estonia, Malta, Latvia, Lithuania, Slovenia, Slovakia. |
| <b>UE-27</b>           | UE 25+ Bulgaria and Romania  |
| <b>UE-28</b>           | UE 27 + Croatia  |
| <b>UICN / IUCN</b>     | Unión Mundial para la Naturaleza / <i>The World Conservation Union</i>   |
| <b>UV-B</b>            | Ultraviolet Radiations   |
| <b>GVA</b>             | Gross Value Added  |
| <b>VAG/GAW</b>         | Vigilancia Mundial de la Atmósfera / <i>Global Atmospheric Watch</i>   |
| <b>WISE</b>            | Sistema Europeo de Información de Agua / <i>Water Information System for Europe</i>  |
| <b>WWF</b>             | Fondo Mundial para la Naturaleza (WWF-España, en nuestro país) / <i>World Wide Fund for Nature</i>   |
| <b>ZEC/SAC</b>         | Special Areas of Conservation  |
| <b>ZEPA/SPAB</b>       | Special Protection Areas for Wild Birds  |
| <b>ZEPIM/SPAMIs</b>    | Specially Protected Areas of Mediterranean Importance  |

## SYMBOLS, UNITS AND CHEMICAL COMPOUNDS

|                  |   |
|------------------|---|
| €                | Euro  |
| €05              | Euro value at constant prices in 2005   |
| AOT 40           | Índice de superación del umbral de ozono/ <i>Amount Over Threshold</i>  |
| CCl <sub>4</sub> | Carbon Tetrachloride  |
| CFC              | Chlorofluorocarbon  |
| CH <sub>4</sub>  | Methane   |
| CO               | Carbon Monoxide   |
| CO <sub>2</sub>  | Carbon Dioxide  |
| POP              | Persistent Organic Pollutants   |
| VOC              | Volatile Organic Compounds  |
| COVNM            | Non-methane Volatile Organic Compounds  |
| dB               | Decibel. Measure of sound pressure level  |
| dB(A)            | Weighted decibels (A scale)   |
| DBO <sub>5</sub> | Five-day Biochemical Oxygen Demand  |
| COD              | Chemical Oxygen Demand  |
| GT               | <i>Grosse Tonnage</i> : Measure of tonnage of fishing vessels. In use since 1998 when it replaced <i>Gross Registered Tonnage</i> (GRT) |
| GWh              | Gigawatt/hour   |
| h                | Hour  |
| ha               | Hectare   |
| inhab            | Inhabitant  |
| HBFC             | Hydrobromofluorocarbon  |
| HCFC             | Hydrochlorofluorocarbon   |
| hm <sup>3</sup>  | Cubic hectometre  |
| kg               | Kilogram  |
| km               | Kilometre   |
| km <sup>2</sup>  | Square kilometre  |
| kteo             | Kilotonnes of oil equivalent  |
| kW               | Kilowatt  |
| kWh              | Kilowatt-hour   |
| l                | Litre   |
| L <sub>Aeq</sub> | Equivalent continuous A-weighted sound pressure level. Expressed in A-weighted decibels (A)   |
| L <sub>eq</sub>  | Equivalent continuous noise level. Expressed in dB  |
| L <sub>den</sub> | Day-evening night noise indicator (English acronym). Measured in dB   |
| L <sub>n</sub>   | Night-time noise indicator (English acronym). Measured in dB  |

|                                   |  |
|-----------------------------------|--|
| <b>mg</b>                         | Miligram   |
| <b>mt</b>                         | Metric tonnes  |
| <b>MW</b>                         | Megawatts  |
| <b>MWp</b>                        | Megawatt peak  |
| <b>MWt</b>                        | Megawatt thermal   |
| <b>m<sup>2</sup></b>              | Square metre   |
| <b>m<sup>3</sup></b>              | Cubic metre  |
| <b>N</b>                          | Nitrogen   |
| <b>NH<sub>3</sub></b>             | Ammonia  |
| <b>N<sub>2</sub>O</b>             | Nitrous oxide  |
| <b>NO<sub>x</sub></b>             | Nitrogen oxide   |
| <b>O<sub>3</sub></b>              | Ozone  |
| <b>P</b>                          | Phosphorous  |
| <b>PCB</b>                        | Polychlorinated biphenyl   |
| <b>PCT</b>                        | Polychlorinated terphenyl  |
| <b>PFC</b>                        | Perfluorocarbon  |
| <b>P<sub>2</sub>O<sub>5</sub></b> | Orthophosphates  |
| <b>PM10</b>                       | Particulate matter with a diameter of 10 microns or less   |
| <b>PM2.5</b>                      | Particulate matter with a diameter of 2.5 microns or less  |
| <b>ppm</b>                        | Parts per million  |
| <b>Ppmm</b>                       | Parts per thousand million   |
| <b>SF<sub>6</sub></b>             | Sulphur hexafluoride   |
| <b>SO<sub>2</sub></b>             | Sulphur dioxide  |
| <b>t</b>                          | Tonne  |
| <b>t-km</b>                       | Tonne kilometre. Unit of measurement of freight transport. It is calculated by multiplying the number of tonnes transported by the number of kilometres travelled          |
| <b>TJ</b>                         | Terajoule  |
| <b>GRT</b>                        | Gross Registered Tonne   |
| <b>v-km</b>                       | Passenger-kilometre. Unit of measurement used for passenger traffic. It is calculated by multiplying the annual number of passengers by the number of kilometres travelled |
| <b>µg</b>                         | Micrograms   |
| <b>&gt;</b>                       | More than  |
| <b>&lt;</b>                       | Less than  |
| <b>1,000 t</b>                    | Thousand tonnes  |

## CLARIFICATIONS

### Clarification 1.

The Spanish Official State Gazette (BOE) of Friday, 29 July 2005 publishes the Resolution dated 28 July 2005 of the Undersecretariat, which gives publicity to the Agreement of the Council of Ministers from 22 July 2005, approving the guidelines of technical regulations. Said resolution defines the official names of the Spanish Autonomous Communities and Cities under a Statute of Autonomy. The above mentioned official names are as per below, appearing in order of approval of the appropriate Statutes of Autonomy thereof:

Autonomous Community of the Basque Country or Euskadi  
Autonomous Community of Catalonia  
Autonomous Community of Galicia  
Autonomous Community of Andalusia  
Autonomous Community of Asturias  
Autonomous Community of Cantabria  
Autonomous Community of La Rioja  
Autonomous Community of Murcia  
Autonomous Community of Valencia  
Autonomous Community of Aragón  
Autonomous Community of Castilla-La Mancha  
Autonomous Community of the Canary Islands  
Autonomous Community of Navarra  
Autonomous Community of Extremadura  
Autonomous Community of the Balearic Islands  
Autonomous Community of Madrid  
Autonomous Community of Castilla y León  
Autonomous City of Ceuta  
Autonomous City of Melilla

Notwithstanding this regulation, throughout the development of the Environmental Profile of Spain, abbreviated references of the autonomous communities are likely to appear in the charts or tables, otherwise it would be much difficult to fit longer names in the text.

**Clarification 2.**

The location of the various autonomous communities across Spain is shown in the administrative map below.

**MAP IDENTIFYING AUTONOMOUS COMMUNITIES AND AUTONOMOUS CITIES IN SPAIN**

## APPENDIX II

### THEMATIC INDEX OF INDICATORS

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