Enviromental Profile of Spain 2015

GOBIERNO DE ESPAÑA

MINISTERIO
DE AGRICULTURA Y PESCA,
ALIMENTACIÓN Y MEDIO AMBIENTE

ENVIROMENTAL **Profile** OF Spain 2015

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The Environmental Profile of Spain 2015 is a report prepared at the Directorate General for Environmental Quality and Assessment and Natural Environment (the National Focal Point of the European Environment Agency in Spain) of the Ministry of Agriculture and Fisheries, Food and Environment. This annual series, which began with the Environmental Profile of Spain 2004, has the objective of making the details of the environmental situation in Spain accessible to the largest possible audience, with information broken down per autonomous community and in reference to the European Union.

This edition maintains the structure of the previous year, with a first section that includes the analysis of themes of environmental significance, a second part comprised of 80 indicators, distributed across 18 chapters, and a third section that offers information broken down by autonomous communities, prepared in collaboration with the Regional Focal Points of the EIONET Network of the European Environment Agency. Since the 2012 edition, the publication has been available to download and is available for mobile devices, formats that have been maintained this year.

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Environmental Profile of Spain 2015

Indicator-based Report

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INTRODUCTION

Environmental management requires clearly defined policy actions and commitments. Comprehensive, accurate and reliable information is needed both for the preparation of public policies and for the involvement and participation of policy makers, civil society and economic sectors.

For this reason, information constitutes a vital tool for the development and the success of environmental policies, an area in which citizen awareness and participation are also fundamental.

In fact, the General Union Environment Action Programme to 2020 'Living well, within the limits of our planet' includes, as a priority objective, to improve the knowledge and evidence base for Union environment policy.

The Environmental Profile of Spain 2015, in this its twelfth edition, is a clear example of the interest and commitment of the Ministry of Agriculture and Fisheries, Food and Environment in fulfilling this purpose. It maintains its objective of being the most outstanding instrument of environmental information for citizens. In this regard, it draws on updated indicators aimed at the dissemination with full rigor of environmental information.

This publication is targeted at decision makers, technical managers, scientists, students and, above all, the general public. It also complies with various international commitments and is part of different initiatives, in addition to complementing the available information about Spain. This is the case, for example, of the report "The European environment – state and outlook 2015" (SOER 2015), published by the European Environment Agency, which integrates the Environmental Profile of Spain into its chapter on country analysis.

In addition, the Environmental Profile of Spain has an added value, which is a process of preparation that involves the Spanish Environmental Information and Observation Network of the Environment Agency (EIONET). This network is composed of more than 300 institutions across Europe, whose objective is to provide guaranteed quality data and expertise to assess the state of the environment in Europe.

Many technicians and experts from the General State Administration, the autonomous communities and the local level have worked and made contributions in order to bring this information to the public and other interested social agents. I very much appreciate this work and dedication.

At the beginning of this new legislature, we have great challenges in terms of the protection, conservation and improvement of the environment, efficient and rational management of natural resources, growth and sustainable development, the circular economy and the fight against climate change. I trust that the Environmental Profile will contribute to achieving these objectives.

Isabel García Tejerina
Minister of Agriculture and Fisheries, Food and Environment

FOREWORD

The current edition of the Environmental Profile of Spain 2015 maintains the same background as the eleven previous publications, serving as a basis for knowledge and the spread of environmental information. At the same time, it allows for the monitoring of the successes that our work and common effort have achieved in the policies and measures established for the protection, conservation and improvement of the environment.

Featuring the format and structure of previous editions, the Profile allows us to track environmental policies, adapting to the very latest technological innovations. This publication covers not only issues that are the competency of the Ministry of Agriculture and Fisheries, Food and Environment, but also other departments and institutions. This scope allows us to have a closer look at the environmental reality, integrating other economic and social sectors.

In 2015, the OECD published the report "Environment at a Glance 2015: OECD Indicators". The report highlights the importance of specific aspects of the environment, such as, for example, atmospheric contamination, climate and human health, water demand and management, municipal waste discharge, threats to biodiversity, research, development and innovation and market instruments to establish the cost of pollution. The same document underlines the scope that exists for improving the information available for the assessment of environmental progress in each country.

These contents are not far removed from the agendas of other organisations such as the European Environment Agency and the European Commission. For example, the 7th Environment Action Programme also recognises the importance of environmental information in these matters.

The Environmental Profile of Spain 2015 includes and reveals the same aspects through the development of 80 indicators distributed across eighteen chapters, taking us closer to these environmental issues. This content has evolved over the years, adapting to the current demand for information. The Profile has grown from 13 chapters in the Environmental Profile of Spain 2004 to 16 chapters in 2009, to 17 in 2012 and to the current figure of 18 since 2014. Indicators, which provide the backbone of the second part of the report, are the tool chosen for presenting the environmental information.

The previous publication (2014) included, as a new feature, an initial section that contained a number of brief, detailed studies of a selection of issues that were chosen for their specific importance. In the current edition, two themes have been selected for these special studies:

"Towards a green economy" and "Efficient use of resources". Both are basic disciplines of environmental and economic sustainability within the current framework of the circular economy, which aims to integrate the environment into the economic and productive sectors.

The report has a third section with specific information on each autonomous community. Taking the format of a fact sheet, it compiles a selection of administrative, social, economic and environmental indicators, with the purpose of complementing the information about these variables offered by the Profile indicators. This specific content was included for the first time in the Environmental Profile of Spain 2007, and since then it has been updated and improved every year.

To conclude, I would like to emphasize that there have been many technicians and experts who have participated in the preparation of the publication, and to whom I would like to express my special thanks. Their effort and dedication allow us to fulfil this objective of providing the widest possible audience with the best information available on the environment and through modern information technologies. We are confident that we can continue to rely on their expertise and experience in future editions. Thank you very much.

Pablo Saavedra Inaraja
State Secretary for the Environment.

Thematic Analysis: Assessment of Environmental Aspects

1.1 TOWARDS A GREEN ECONOMY

Human progress, based on economic growth and its spread to greater numbers of countries and populations, is resulting in the overexploitation of resources and the environment on an unprecedented scale.

A green economy is "that which results in the improvement of human welfare and of social equality while reducing environmental risk and ecological scarcity." (UNEP, 2011)

One of the principal lessons learned as a result of the global economic crisis of recent years is the impossibility of continuing with economic development under the terms maintained up until now. From international organisations to citizens, through states and companies, it is more and more accepted that **human progress** , based on unsustainable economic growth and its spread to more and more countries and peoples, is resulting in an **overexploitation of resources and of the environment** on an unprecedented scale. Similarly, awareness is becoming more widespread that intensive use of resources is not only an environmental problem but an economic and human one due to the impact of current models of economic growth.

A green economy is "that which results in the improvement of human welfare and of social equality while reducing environmental risks and ecological scarcity".[1] However, in attempting to gain an overall understanding of this new paradigm, it is also necessary to point out that a green economy is an economy of low carbon emissions, which uses resources in an efficient way, at the same time as being socially inclusive both in terms of consumption patterns and the profits derived therefrom. It is based on circularity, solidarity, resilience, independence and opportunity.

From a more strictly economic perspective, it focuses on growth opportunities supported by public fiscal policy and protection and backed by institutions created

[1] PNUMA, 2011. *Towards a green economy A guide for sustainable development and the eradication of poverty - synthesis for policy-makers. www.unep.org/greeneconomy*

ex profeso to monitor and maintain social and environmental welfare. The final objective is not merely a quest to create jobs and financial profit, but also public and environmental health and a sustainable future. The conditions must be created to **reconcile prosperity and progress** with the increase in social equality and limits to the exploitation of resources on a finite planet.

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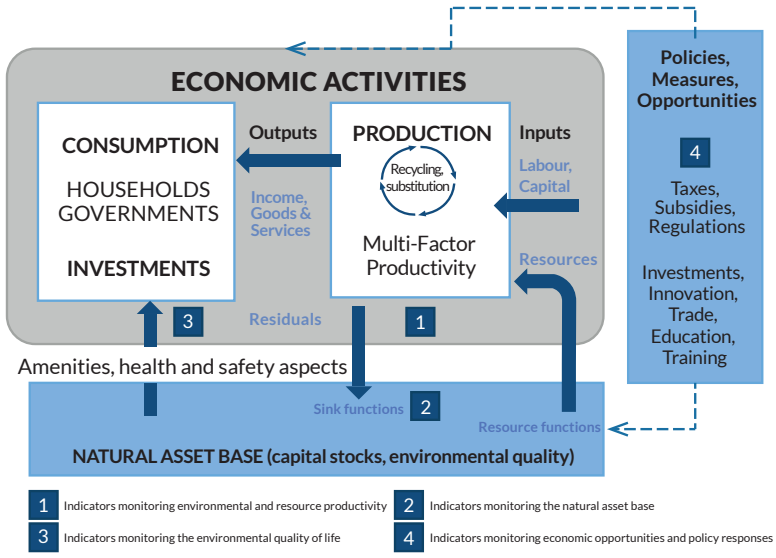


"Green growth is centred on facilitating the conditions required for the innovation, investment and competition that can bring about new sources of economic growth that are compatible with adaptable ecosystems."

OECD (2011) Towards Green Growth

Secondly, the concept of a green economy should be analysed and understood jointly from the perspective of **green growth**.

Green growth "is not a substitute for sustainable growth but should rather be understood as complementary to it. Its scope is broader which implies a policy agenda which can help achieve specific and measurable progress in the intermediate area between the economy and the environment. Green growth is centred on facilitating the conditions required for the innovation, investment and competition that can bring about new sources of economic growth that are compatible with adaptable ecosystems."[2]

At the confluence of the green economy and green growth there is the conceptual perspective that these new approaches provide to classic models of economy and growth.

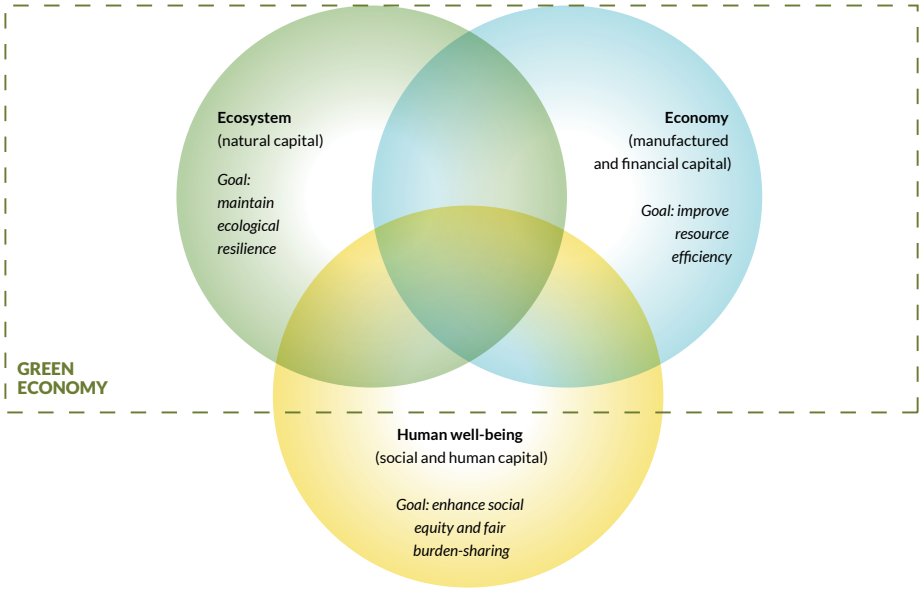
Compared to economies based on the massive exploitation of resources, it calls for efficient use. Thus, the World Business Council for Sustainable Development (WBCSD) estimates that in 2050 efficient use of resources must be at least **four times higher** than at present.

The World Business Council for Sustainable Development estimates that in 2050 efficient use of resources must be at least four times higher than at present.

[2] OECD (2011), Towards Green Growth, OECD Publishing.

On development models based on macroeconomic growth, **the spread of prosperity** is advocated in the areas of health, welfare and environmental protection.

To measure growth and the economy based on GDP requires an assessment of **environmental productivity and productivity of resources**, from the perspective of natural capital, environmental quality of life and response to regulations and opportunities.



A modification of cultural values and principles is required for the purposes of incorporating several concepts such as efficiency, sustainability and equality

Cultural Perspective

In the transition from traditional economies and development towards the tenets of the green economy and green growth, the success or failure of the **change of cultural paradigm with respect to the economy will play a defining role**. This is why experts and international bodies conclude that a modification of cultural values and principles is required in order to incorporate certain concepts such as efficiency, sustainability and equality.

This paradigm shift is even more visible if it takes on the traditional argument that postulates the impossibility of developing countries reaching the standards of welfare and development of developed countries because of the enormous use of resources that would be involved therein. On the contrary, the only way of achieving this rapprochement is through **a new model** that, operating in all countries, comes to replace the way in which growth and development has been understood globally.

Green Jobs

Green jobs are jobs that contribute to the conservation, restoration and improvement of the environment in any sector of the economy (agriculture, industry, administration and services). Green jobs **reduce** the impact on the environment of companies and sectors of the economy, **increasing the efficiency** of consumption of energy, raw materials and water, decarbonising the economy and reducing emissions of greenhouse gases, minimising or preventing any form

of waste and pollution, restoring ecosystems and biodiversity and adapting to climate change.

For the International Labour Organisation (ILO), the concept of green jobs reflects the transformation of economic activity, places of work, companies and labour markets in a low-carbon, sustainable economy that offers the opportunity of decent work for all.[4]

In general, it can be said that the transition to a greener economy creates, and continues to create, employment in **a wide range of sectors**. According to the ILO/UNEP/ITUC report "Towards Sustainable Development", most studies show an increase ranging from **0.5 to 2%** annually, which would translate globally into **15-60 million new jobs.**

Equally, job losses are expected in some sectors of the economy as a result of the change towards a greener economy. Up to **1% of the workforce in industrialised countries,** where a larger impact on labour markets is expected, may be affected by the transition between sectors.

It is foreseen that movements of workers between companies will be ten times higher. However, this impact would be small in comparison to other experiences associated with globalisation that have occurred over recent decades.

The transition to the green economy has the potential to create millions of jobs. It may also, however, lead to the **reduction of staff in industries with high emission rates.** It is difficult to predict the exact repercussions given that national realities are so diverse. However, most possible scenarios suggest that the net effect will be positive. The countries already advancing towards a green economy are witness to these effects.

A greener economy is not pre-determined to be inclusive or socially sustainable. Social and workspace policies must complement economic and environmental policies to **cushion the inconveniences of the transition to the green economy**. At a national level, the positive progression will also depend in great measure upon the coordination of policies and prior planning, including new training of workers and improvement of skills. It is worth paying special attention to the staff that require appropriate knowledge and skills to successful integrate with the green economy.

Green jobs are jobs that contribute to the conservation, restoration and improvement of quality of the environment in any sector of the economy

Green Growth in the European Union

In the scope of the European Union, the transition towards a green economy began officially under the **Roadmap to a Resource Efficient Europe.**[5] This communication from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions starts by recognising the economic model that has been used for the EU to reach development and prosperity.

[4] International Labour Organisation (2014). What are green jobs?
http://www.ilo.org/global/topics/green-jobs/news/WCMS_325253/lang--es/index.htm
[5] Communication of the European Commission Roadmap to a Resource Efficient Europe {SEC(2011) 1067 final}

Nevertheless, said communication proposed the transition to the green economy as a "double challenge of stimulating the growth necessary for employment and welfare of citizens and, on the other hand, ensuring that the quality of this growth yields future sustainable growth."[6]

In line with what has been established in the section on the concepts of the green economy and green growth, the EU has developed different initiatives directed at promoting an efficient use of resources stressing the **business opportunity** for companies and the **general competitiveness** that this will involve.

Similarly, the way in which the European Union is making the transition to a new economic paradigm must be considered as a model, as from the declaration of the roadmap itself in 2011, the need to rely on a **strategic framework** within which all subsidies and incentives for innovation and the efficient use of resources could be concentrated was already established. Specifically, it established the need to generate "economic opportunities and greater security of supply thanks to the new design of products, sustainable management of environmental resources, the increase of reuse, recycling and substitution of materials."[7]

Secondly, it must be mentioned that the approval of the **current General Union Environment Action Programme** in January 2014 saw the definitive transition of the EU to the green economy.

The roadmap to a Europe that is efficient in the use of resources lays down the challenge of the transition to the green economy

"Living well, within the limits of our planet"

The EU is developing different initiatives aimed at promoting an efficient use of resources, underscoring the business opportunity for companies and the general competitiveness involved

This action plan, the slogan of which is "Living well, within the limits of our planet" aspires to be **a reference model for green growth** and is based around three strategic objectives:[8]

1. Protect, conserve and enhance the EU's natural capital;
2. Turn the Union into a resource-efficient, green, and competitive low-carbon economy.

[6] Ibidem.
[7] Ibidem.
[8] European Commission (2014). General Union Environment Action Programme to 2020 Living well, within the limits of our planet. Luxembourg

3. Safeguard the Union's citizens from environment-related pressures and risks to health and well-being.

Under the terms of this plan and other EU actions, one can say that the EU intends to base its growth on the use of **energy that minimises emissions of greenhouse gases** along with the use of **sustainable resources**. This transition is framed within the Europe 2020 Strategy, which identifies sustainable growth as one of **three strategic priorities.** However, the roadmap and Europe 2020 are not the only initiatives for this transition. Therefore, it is worth mentioning the relevance of the Strategy of the European Union on Biodiversity 2020, the EU's package of measures on climate and energy, the EU's Innovation Union initiative, and the Strategy of Sustainable Development.

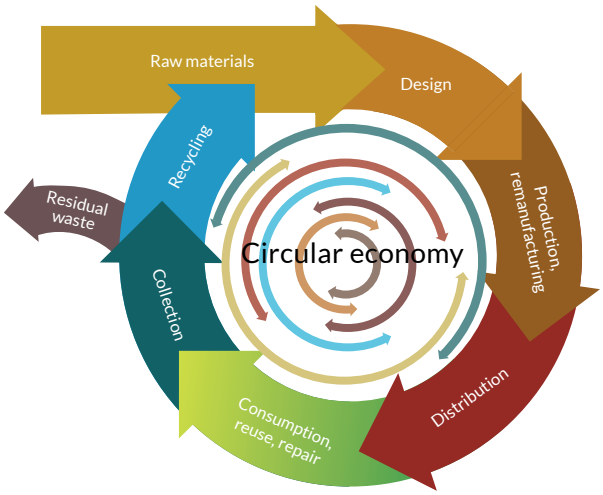
In the transition to the green economy actions aimed at promoting efficient use of resources and fostering employment of a new green generation are particularly important

The EU Circular Economy Package

Adopted by the Commission in December 2015, the **Circular Economy Package** intends to stimulate the transition of Europe towards a circular economy that will encourage global competitiveness, foster sustainable economic growth and create new jobs.

The EU Circular Economy Package is configured as an impulse initiative towards sustainability

With the title "**Closing the loop: An EU action plan for the Circular Economy**" the Commission Communication COM(2015) 614 final establishes the basis for European companies and consumers to pursue the transition to a more solid, circular economy, where resources are used in a more sustainable way. The impetus to recycle and reuse will contribute to "closing the loop" of the life cycle of products, benefiting both the environment and the economy.



The Commission's approach includes **revised legislative proposals on waste**, and a complete **action plan** with a specific mandate.

The proposals on waste establish a long-term vision that is clear and ambitious with respect to recycling and the reduction of landfill, at the same time proposing specific measures for the improvement of waste management.

The Energy Transition for Green Growth Act seeks to meet the challenge of turning France into a leading and pioneering country in terms of legislation towards green growth

The action plan for a circular economy covers all phases of the life cycle of the product: production, consumption, waste management and the market for secondary raw materials. The plan centres on the existing obstacles in specific sectors and raw material flows, such as plastics, food waste, critical raw materials, construction and demolition, biomass and bioproducts, along with horizontal measures in areas such as innovation and investment.

The European Environment Agency was part of this process and for some time has been participating in processes to define and structure this new concept of sustainable economy. The report "The European environment — state and outlook 2015" (SOER 2015) included a specific chapter on the green economy in its section on European Briefings. It is a theme of particular importance that has been dealt with from several perspectives, forming part of other publications or reports, pamphlets and specific publications. For example, the report "Circular economy in Europe — Developing the knowledge base (EEA Report No 2/2016)" describes the concept of the circular economy and its principal characteristics, analysing the benefits and challenges towards the transition and the possible ways of measuring progress.

On the other hand, the Agency will be responsible in the future for the development of indicators to measure the activities of the action plan and a monitoring model.

In terms of the international experience, in other countries the initiatives towards the green economy have been approached in different ways. In France, for example, the approvalof the **Energy Transition for Green Growth Act** seeks to meet the challenge of becoming a leading and pioneering country in terms of legislation towards green growth.

The Spanish Case: Spanish Group for Green Growth

The Spanish Group for Green Growth brings together a group of companies in Spain that want to put forward their vision of an economic growth model

The Spanish Group for Green Growth brings together a group of companies in Spain that want to bring to society and the public administrations their **vision of an economic growth model** compatible with efficient use of natural resources. Made up of companies and the Central Administration, it is set up with four specific objectives:[9]

- Debate on which public policies might be most efficient.
- Increase Spain's weight at international forums.
- Generate opportunities for growth and employment.
- Improve collaboration and synergies between the business sector and Administration in the fight against climate change.

It was born as a public-private collaboration initiative. This partnership formula is essential when it comes to agreeing visions and proposals

It must be noted that the Spanish Group for Green Growth was born as a **public-private collaborative initiative**. It began as a small number of companies that were particularly pro-active in terms of opportunities on the low emissions agenda and in the transition to a green economy.

[9] Spanish Group for Green Growth (http://grupocrecimientoverde.org/)

And this is the new business horizon where transition is key. There are companies that find it easier, due to the nature of their activity, **to confidently take on** this transition, while there are others who find it more difficult. For this reason it is essential to establish the model of transition; a **transition that must be foreseeable** in the regulatory environment, in the economic framework and in the institutional environment. It is essential that, over the coming years and decades, companies **adapt their business model**.

The opportunity for and willingness of Spanish companies is reflected by their presence on the DowJones Sustainability Index where 16 companies are present

The Spanish Group for Green Growth adopted the **Barcelona Declaration,** in which its members made a series of recommendations to advance along the path to the transition towards a green economy:[10]

1. Recognise the green economy as the source of economic growth and prosperity.
2. Approve policies that strengthen the green commitment.
3. Establish a stable, predictable and transparent regulatory framework.
4. Eliminate administrative obstacles and ensure institutional coordination.
5. Promote research, innovation and technology as a catalyst for growth.
6. Foster information and awareness.
7. Develop financing capacity and eliminate barriers.
8. Advance towards a low-carbon economy with the contribution of all sectors.
9. Boost public-private collaboration.
10. Review the taxation system to convert it into a tool to support green growth.

The Spanish Group for Green Growth have pointed to predictability as a principal requirement requested by companies in this transition

Its report "Green Growth: Spain Today and Tomorrow"[11] contains the fundamental principles and analyses the potential for development of the green economy and its application in the Spanish context.

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

[10] Spanish Group for Green Growth (2015). Barcelona Declaration. http://grupocrecimientoverde.org/wp-content/uploads/2016/05/10-recomendaciones-para-que-la-econom%C3%ADa-baja-en-carbono-genere-crecimiento-y-empleo.pdf
[11] Spanish Group for Green Growth (2016). "Green Growth: Spain Today and Tomorrow" http://grupocrecimientoverde.org/wp-content/uploads/2016/06/GECV_-Espa%C3%B1a-hoy-y-ma%C3%B1ana_Informe.pdf

1.2 EFFICIENT USE OF RESOURCES

The efficient use of resources, put forward in accordance with the objectives of the EU's Europe 2020 strategy for generating growth and employment, is a priority in Spanish public policy

The efficient use of resources is an indispensable element in the advance towards sustainable growth

Environmental pressures caused by economic production to obtain a range of natural capital goods and services is an issue that requires the reconciliation of achieving the aimed for profits while systematically avoiding damage and repairing those that inevitably occur. From this comes the proposal to "do more with less," a fundamental expression of the notion of efficient use of resources, which we identify in the transition towards a circular, low-carbon economy and the objectives of sustainable development.

The efficient use of resources was confirmed as a priority of Spanish public policy. It is put forward in accordance with the objectives of the EU's Europe 2020 strategy in order to generate growth and employment, based on knowledge, innovation, long-term sustainability and territorial and social cohesion subject to biophysical restrictions.

The key initiative of said strategy, "A Resource Efficient Europe", identifies efficiency in the use of resources as an element that facilitates the advance towards sustainable growth with more and better employment; it constitutes a fundamental base for the frameworks for action, work agendas and support measures put in place in Spain. It is applied in several different areas of environmental management (ecology, resources, natural capital and restoration of resilience, alongside prevention, control, restoration and repair of the impacts of contamination in all its strands) and climate change (from the point of view of prevention, mitigation and adaptation).

International and EU commitments to sustainable development in all its dimensions constitute the axis of the approaches in relation to the production and consumption of resources. These commitments form a fundamental part of the current socio-economic policies in the sector, such as agriculture and livestock farming,[1] fishing, industry, energy, transport, the residential sector, infrastructure, tourism, distribution and commerce, different services and territory, and those of a horizontal nature, associated with research and innovation, health, education, culture and training of human capital, among others.

In the case of agriculture and livestock farming

The payment to farmers that apply agricultural practices beneficial to the environment ("green payments") as part of a package of financing instruments of the Common Agricultural Policy (CAP), demonstrates the commitment to sustainability in its climate and socio-economic strands. It frames a system for supporting best practices compatible with a very efficient use of natural resources, along with the recognition of the socio-economic and environmental value of good practices in agriculture and the rural environment, with the preservation and repositioning of resources and services that provide the ecosystems and also the agro-ecosystems.

The circular and low-carbon economy, highly-efficient in the use of resources, is the expression of the socio-economic, environmental and climate commitments that have been made in the international arena by the EU, and in Spain as a leader in public and private commitment to sustainability, growth, employment and welfare

The consideration of the optimum use of resources in planning and management, subject to restrictions posed by the limits of resources and vulnerability of the environment and climate, requires attending to the facts and the complexity of the confluence of responsibilities of public and private dimensions that are involved and interested. Such a confluence generates the potential for success when oriented towards full participation in the different dimensions and attention to the objectives and it also facilitates greater knowledge of all the needs and their associated impacts and consolidates better governance of all of the elements from a perspective that is complementary, with synergies and holistic and integrated approaches.

In this sense, regulatory planning instruments and public programmes, along with private actions taken and public-private commitments and agreements, generate a reference base for action in the advance towards optimum use of resources in all scopes of activity.

The Circular, Low-Carbon and Resource Efficient Economy

The circularity strand refers to the opportunity to improve the welfare of society, the environment and the climate, when we take advantage of the concepts of cycle and efficient use of materials and factors of production. The circular economy seeks to continue advancing by taking advantage of competitive opportunities to overcome rigidities and risks inherent in the use-and-dispose models by

[1]http://www.magrama.gob.es/es/prensa/noticias/comienza-la-campa%C3%B1a-para-presentar-las-solicitudes-de-ayudas-directas-de-la-pac-para-2016/tcm7-409867-16 ;

optimising the potential benefits and savings in the different phases of a **circular, rather than linear** economy.

More specifically, the circular economy seeks to maximise the harnessing and value of natural resources through repeated reincorporation of production and consumption processes while also considering the requirement to live within the limits of the planet, as recognised in the **6th Environmental Action Programme**,[2] in the **European Commission Package on the Circular Economy**,[3] and in the **Club of Rome Report**[4] **(2015) on the Circular Economy and the Benefits for Society**.

The Club of Rome Report

The Club of Rome Report (2015), in its analysis of the benefits of the circular economy and it effects on carbon emissions and employment, carried out in five EU member states (Finland, France, Spain, the Netherlands and Sweden), highlights significant improvements in energy efficiency, reductions in consumption of fossil fuels when these are replaced by renewable energies (wind, solar, biofuels), and the advances towards efficient industrial production from the material perspective, when waste is minimised and reuse and recycling maximised. Under the hypothesis of a combination of a 25% global increase in material efficiency, a 50% substitution of raw materials with secondary materials, along with the doubling of the useful life of products, the results of the report show reductions in carbon emissions and increased employment.

With greater detail, in a scenario of replacing fossil fuels with renewable energies, the reduction is 50% of emissions in all countries studied in the report. The creation of employment associated with the use of agricultural and forestry materials for the production of energy in Spain is estimated at 100,000 jobs. In the case of the scenario of improved energy efficiency, reductions in emissions of up to 30% are achieved in all countries, along with the creation of part-time employment associated with the duration of work to improve energy efficiency. In the scenario of improved material efficiency, reductions in emissions are in and around 3 to 10%, to which the creation of over 200,000 jobs in Spain must be added.

If these three scenarios are combined, benefits would include a reduction in carbon emissions of two thirds, a figure that rises to 70% in the case of Spain, the creation of 400,000 jobs in Spain (which would reduce the unemployment rate by 15-20%) and improve the trade balance by an average of 1.5% of GDP in each country (in Spain 200 billion euros). All of these reasons demonstrate the opportunity of moving towards sustainability and resource efficiency.

Also, the OECD[5] has highlighted the strategic role of the circular economy model in decoupling production and use of the factors of production; quantification works in this area of the economy are key, including those relating to indicators

[2] http://ec.europa.eu/environment/action-programme/
[3] http://ec.europa.eu/environment/circular-economy/index_en.htm
[4] http://www.clubofrome.org/wp-content/uploads/2016/03/The-Circular-Economy-and-Benefits-for-Society.pdf
[5] Measuring material flows and resource productivity. The OECD Guide.
https://www.oecd.org/environment/indicators-modelling-outlooks/MFA-Guide.pdf

of the productivity of resources, as an expression of the real relation between GDP and Total Material Requirement, contributing to the analysis of options to achieve the disassociation between economic growth and use of resources and factors of production, and their impact.

Zero Waste of Resources

Work has been continuing for more than four decades on reports such as *The Limits to Growth* at MIT, commissioned by the Club of Rome. At present, there is a relevant base of knowledge and experience of system dynamics, along with indicators to offer a picture of prior evolution and future proposals in relation to the use and consumption of resources, their sustainability and prevention of exhaustion of stocks of essential resources.

Given that the risk of exhaustion of certain resources does exits it must be highlighted that opportunities to prevent this situation and knowledge are essential. The key lies in taking advantage of opportunities to advance towards a very efficient use of resources in a circular, low-carbon economy that is highly efficient in the use of resources and in which there is **zero waste** of resources. The thematic thread leading to this conclusion is the following:

The key lies in taking advantage of opportunities to advance resource efficiency in a circular, low carbon and resource efficient economy, in which there is zero waste of resources

- Firstly, we must refer to the metric associated with the ecological footprint of the European continent, that is to say, the surface necessary to satisfy Europe's resource requirements. According to the conclusions published by the World Wide Fund for Nature (WWF) in 2014 in the their "Living Planet Report 2014-Species and spaces, people and places," conforming with the calculation methodology established by the Global Footprint Network and considering the results of studies carried out by the European Commission, based on these figures, Europe's ecological footprint has almost doubled its area.
- If we add to this the fact that, according to Eurostat and the European Environment Agency, EU dependence on imported resources is on the increase, we begin to develop a graphic idea of the imbalance between resources and demand in the EU as concluded from such hypotheses. In addition, when we complete this exercise in the case of the global ecological footprint in accordance with the conclusions of the above publication, and in accordance with the PNUMA studies, one also concludes that the global ecological footprint has exceeded the biocapacity of the Earth since 1985.

This reasoned scenario heavily influenced the 7th EU Environment Action Programme (2014-2020). Said Programme identifies the limits of the planet as the main element, giving rise to the title of the Programme: "Living well, within the limits of our planet". The EU has paid attention to the figures that warn that in order to meet the current consumption trends in the EU, whether through own

or imported production, by homes, public consumption and companies, with current production models, it would be necessary for the surface of the Earth to be greater than it is.

Following this reasoning, the EU has identified the convenience of disassociating production and total ecological footprint associated with production. In other words, the EU seeks to disassociate and reduce the pressures and impact exercised through use of resources in the degradation of ecosystems and biodiversity, air, water, soil, etc., caused by the production of goods and services.

On the other hand, the indicator "Resource Efficiency in the EU", developed by Eurostat (2014) in accordance with "Roadmap to a Resource Efficient Europe (COM (2011) 571 final)", notes the need to advance in the area of resource efficiency and circularity. The combination of indicators here, with Productivity of Resources as the main indicator defined in relation to economic production (GDP) and Total Material Requirement (GDP/TMR), corroborates the need to disassociate production and use of the factors of production, both in the case of materials extracted from EU territory and in that of net asset flows and resources imported from outside the EU. Other alternative indicators, such as consumption of raw materials or Material Footprint, show similar signs in favour of improving efficiency in the use of certain materials and resources.

For all that, the conclusion reached is that in order for the EU and each of its member states to comply with the 2020 objective and grow a smart, sustainable and integrated economy, policies and actions must be put in place aimed at advancing towards a green, low-carbon and highly resource efficient economy, as established in the **7th Environment Action Programme**. Roadmap to a Resource Efficient Europe is oriented along the same lines.

The 7th Environment Action Plan diagnoses and provides recommendations for the prevention and reduction of the adverse impact of waste generation and management, for the reduction of the global impact of use of resources: prevention, preparation for reuse, recycling, other types of recovery and, finally, elimination, where there is no other viable option.

This package of actions, subsequently incorporated into the Package on the Circular Economy by the Commission in December 2015, will make it possible to considerably increase efficiency in the use of energy and of raw materials, and will alleviate pressure on the environment and climate, strengthening competitiveness and creating new sources of growth and employment, thanks to cost savings provided by increased efficiency, the commercialisation of innovation and better management of resources throughout their life cycle. It is feasible, therefore, that this possibility becomes a reality when all sectors of the economy and social agents contribute from a production and sustainable consumption approach in a circular, low-carbon and resource efficient economy.

In line with the European Commission's approach, Europe must work on the production and consumption process in its entirety to close the loop, producing the most value possible and using the minimum amount of natural resources, driving Europe towards a profound transformation in the functioning of our economy.

We must also refer to instrumental elements allied with this circular focus and its interaction with efficient use of resources: innovation in the **ecodesign** of products and processes,[6] **prevention** of waste, **preparation for reuse** and **recycling**.[7] All of these constitute opportunities and new skills in design, engineering, production models, distribution and consumption of sustainable products and services, reinforced with regulatory, planning financing and other existing measures[8] in the elaboration phase that make circularity of the economy and resource efficiency a priority.

In relation to the **low-carbon economy**, one thing that stands out is the correlation between improving the welfare of society, the climate and the environment, when dependency and risks inherent to security in the supply of limited and finite material resources and energies associated with economies highly dependent on carbon and non-renewables are overcome. In relation to low-carbon economy, to make highly efficient use of resources alternative to carbon and non-renewables we must take advantage of competitive opportunities to overcome rigidities and risks involving a commercial dependence on these non-renewable external resources and the optimising of potential profits and costs savings in different phases of the economy.

Regarding **the resource efficient economy**, an important correlation must be highlighted between the improvement of the welfare in society, the climate and the environment where the economic mistakes of the market are overcome and when organisations in the public sector identify and appropriately value these services provided by ecosystems and their resources, along with externalities in relation to environmental assets (that is both negative externalities and costs in relation to agents that do not intervene in the production or consumption of assets affecting resources, and positive externalities that are generated thanks to conservation, maintenance and the improvement of environmental assets and best environmental practices in the different sectors of the economy).

[6] http://ec.europa.eu/growth/industry/sustainability/ecodesign/index_en.htm
[7] National Programme on Waste Prevention 2014-2020.
http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/planes-y-estrategias/Planes-y-Programas.aspx
[8] - State Waste Management Framework Plan 2016-202 (PEMAR, as per the Spanish acronym)
http://www.magrama.gob.es/imagenes/es/pemaraprobado6noviembrecondae_tcm7-401704.pdf
- Law 22/2011, of 28 July, on Waste and Polluting Soil
https://www.boe.es/buscar/act.php?id=BOE-A-2011-13046&p=20121220&tn=2
- Royal Decree 110/2015, of 20 February, on Waste of Electrical and Electronic Equipment.
https://www.boe.es/diario_boe/txt.php?id=BOE-A-2015-1762
- REACH:
http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/productos-quimicos/reglamento-reach/

Among the actions to encourage the highly efficient use of resources are "Bio-economy," the "more food less waste strategy" and public action as the driver and demand for highly efficient products and services, through Sustainable and Green Public Contracting.

On the basis of the proposals put forward, and by way of reflection, we must also refer to the potential offered by highly efficient use of resources, especially where these imply natural capital, which is why it is necessary to foster social, economic and environmental development that is viable and compatible with the limits of the planet.

R&D&I oriented towards the advancement of knowledge of inefficient use of resources, as well as efficient use, and the effects of each on the environment and climate, as well as the socio-economic consequences, are essential for good decision making and planning, in both public and private sectors.

Also, the development and future orientation of **tax policies** in Europe also requires an essential framework. Thus, for example, EU income from indirect taxation in EU member states may facilitate a well-balanced budget oriented towards the new realities of the circular, low-carbon and resource efficient economy. The economy associated with markets for raw materials and the figure of the producer consumer ("prosumer") offer an important area for research and innovation for the adaptation of tax models designed for the linear economy and their reformulation and orientation towards the new realities of the circular economy, in a loop, where the final consumer generates raw material that can be reincorporated to the economy in a new phase of future production and distribution of goods and the provision of services.

Policy and Social Response Actions in Spain

The European Environment Agency has been working on the study of resource efficiency for some time. In 2015, it carried out a review of policies on the efficiency of material resources in European countries. The preliminary results allowed for the preparation of the report “More from less —material resource efficiency in Europe. 2015 overview of policies, instruments and targets in 32 countries”. This report was prepared to support the work of the European Commission on efficiency of resources, providing information on the context of different countries.

Complementary to the report, an analysis of the specific situation has been carried out in each country, materialising in a series of separate or independent publications based on information collected from the EIONET Network.

Part of the content of this report, by country, compiles existing initiatives that can contribute to the development of resource efficiency. This list must not be understood as an exhaustive list of national material policies and goals. However, to a certain extent it reflects the management priorities of the bodies

The **EU Multiannual Financial Framework (MFF) Cohesion Policy (2014-2020)** includes sustainable growth among its priorities and, to that end, proposes the development of a more resource efficient economy.

responsible, whether administrative or from the private or public business sector in general.

In the Spanish case, the report details the initiatives that form part of the regulatory framework relating to the efficient use of resources. Among these initiatives, the following national strategies and action plans for material resource efficiency stand out:

- National Programme on Waste Prevention 2014-2020

  http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/planes-y-estrategias/Programa_de_prevencion_aprobado_actualizado_ANFABRA_11_02_2014_tcm7-310254.pdf

- Draft of the New State Waste Plan

  http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/participacion-publica/Residuos-2015-Proyecto-Plan-Estatal-Marco-Gestion-Residuos-Estudio-Ambiental-Estrategico.aspx

- State Waste Management Framework Plan 2016-2022 (PEMAR)

  https://www.boe.es/boe/dias/2015/12/12/pdfs/BOE-A-2015-13490.pdf

- National Integrated Waste Management Plan 2008-2015. (PNIR)

  https://www.boe.es/boe/dias/2009/02/26/pdfs/BOE-A-2009-3243.pdf

- Plans and Programmes of the autonomous communities

  http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/planes-y-estrategias/Planes-y-Programas.aspx#para4

- Spanish Bioeconomy Strategy: Horizon 2030

  file:///C:/Users/magro/Downloads/Documento%20reuni%C3%B3n%209%20de%20julio%20de%202015.pdf

- National Energy Efficiency Action Plan 2014-2020

  https://ec.europa.eu/energy/sites/ener/files/documents/NEEAP_2014_ES-es.pdf

- National Integrated Tourism Plan 2012-2015

  http://www.minetur.gob.es/turismo/es-ES/PNIT/Paginas/que-es-PNIT.aspx

- National Smart Cities Plan

  http://www.agendadigital.gob.es/planes-actuaciones/Paginas/plan-nacional-ciudades-inteligentes.aspx

Voluntary Agreements: a Fundamental Attitude

Within the framework of environmental protection and the reduction of the impact on our environment, commitment of the private sector is fundamental. No environmental policy makes sense without the participation of society and of the

stakeholders directly involved therein. Thanks to the effort of associations, companies and individuals in the field of use of resources, even beyond legal requirement, it is possible to achieve success and close the loop of the environmentally sustainable economy.

Examples of this business policy include the following:

- Agreement with ANEABE: environmental sustainability in the bottled water sector.
- Agreement with the agrifood chain: environmental sustainability in the agrifood sector.
- Agreement with H&M: sustainable management of textile waste.
- Agreement with Koopera: preparation for reuse of waste and creation of social and solidarity employment.
- Agreement with PlasticsEurope: optimisation of the efficiency of resources and reduction of environmental impact.
- Agreement with FEHR and GEREGRAS: sustainability in the correct management of cooking oil and fat waste.
- Agreement with AERESS: fostering and development of prevention and preparation for the reuse of waste through the social solidarity economy.
- Agreement with the Recovery Guild: fostering and development of prevention and preparation for reuse and management of textiles resources.

The Impulse for Resource Efficiency: Future Opportunities

There exists a framework for future opportunities to continue to continue to foster resource efficiency through action both in Europe and beyond. This mobilisation of the private sector support for the consolidation of investment in infrastructure oriented towards a low-carbon, circular economy in the sectors of energy production, water quality, agriculture and the agri-food industry, residential property, transport and communications is a priority. In fact, to help growth within Europe and beyond, it will stimulate investment opportunities of European micro-companies and SMEs and new markets for low-carbon, resource efficient and circular goods and services. The Deva Report (European Parliament Development Committee, Resolution of 14 April 2016) is an example of this.

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

Indicators:
AREAS AND SECTORS

2.1 ECONOMY AND SOCIETY

2015 was marked by a slowdown in the world's economy, which only grew by an average of 3.1% (showing significant differences between economic blocs and geographic areas).

The European Union, within a framework of uncertainty and economic risks, showed signs of recovery in 2015. Gross Domestic Product (GDP) grew by 2%, which represented the highest increase since 2010 and was six tenths up on 2014. This growth was particularly relevant in private consumption, which increased domestic demand.

The basis of the EU's economic framework has recently been analysed in the report "Completing Europe's Economic and Monetary Union" issued in June 2015. Prepared by the President of the European Commission (in cooperation with the Presidents of the Euro Summit, the Eurogroup, the European Central Bank and the European Parliament), the Five Presidents' Report defines the process towards an "Economic and Monetary Union". According to this report, progress must happen on four fronts: **Economic Union** that ensures each economy prospers within the Monetary Union, **Financial Union** that ensures the integrity of each currency across the Monetary Union (by means of the Banking Union and the Capital Markets Union), **Fiscal Union** that delivers both fiscal sustainability and fiscal stabilisation and **Political Union** that provides the foundation for these three Unions through genuine democratic accountability, legitimacy and institutional strengthening.

The process is organised in three stages within a 2025 horizon and it is described in detail in the "Roadmap Towards a Complete Economic and Monetary Union", included in Annex 1 of the report.

The latest data describe a moderate recovery of the EU's economy, in which unemployment is decreasing, although levels are still high. Aspects such as the low price of oil, a relatively weak euro and flexible monetary policies, are some of the positive temporary factors which prevailed during 2015.

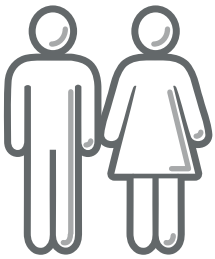
However, the EU has been involved in the human tragedy of the arrival of refugees to the Greek coasts and Aegean Islands.

In Spain, the report of the Economic and Social Council corresponding to 2015 highlights an economic dynamism which boosted the recovery of growth rates for economic activity and job creation at levels comparable to those prior to the financial crisis. The 3.2% increase in GDP in real terms (to which all productive sectors have contributed) is higher than the 1.4% corresponding to 2014 and 1.8% corresponding to the EU average.

Among the factors which have contributed to this situation we may point out the improvement of financial and credit conditions, the increase in the confidence of foreign investors, the drop in the oil price and interest rates, the depreciation of the euro and tax policy. However, imbalances can also be found (such as private and public debt, unemployment rates and public deficit) which may lead to an environment of risk affecting confidence and slowing down the improvement of the economic situation. Growth forecasts for the Spanish economy for 2016 include a moderation in the growth rate as a consequence of the increase in global uncertainty and the volatility of international financial markets.

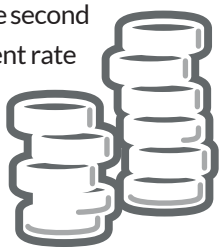
Population

- In 2015, the Spanish population reached 47.3 million inhabitants. 2015 was the third consecutive year that showed a reduction in the number of inhabitants.
- Four autonomous communities (Andalusia, Catalonia, Madrid and C. Valenciana) represented more than 58.6% of the total population in 2015.
- In 2015, Spain contributed 9.1% of the entire EU-28 population. In 2000, this percentage was 8.2.



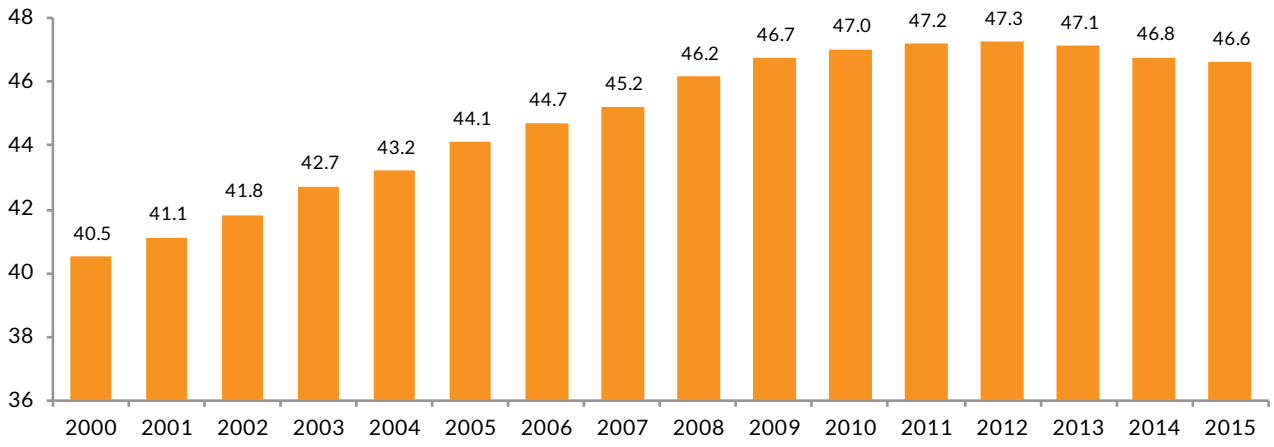
Economic Evolution

- In 2015, GDP in Spain grew 3.8% at market prices and 3.2% in terms of volume.
- In 2014 Spain contributed 8.3% of GDP of the EU-28 (in terms of purchasing power and at current prices).
- With 22.06%, Spain had the second highest 2015 unemployment rate of the countries in the EU-28, whose average was 9.4%.



Population

Official population figures
Review of the Municipal Register of Inhabitants as of 1 January each year (millions of inhabitants)



Source: INE

- ***In 2015, the Spanish population reached 47.3 million inhabitants. 2015 was the third consecutive year that showed a reduction in the number of inhabitants***
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2015 showed a decrease in population figures in Spain once again. It is the third year in a row for a trend which started in 2013. Between the years 2000 and 2012, the total Spanish population grew 16.7%, reaching 47,265,321 inhabitants.

Whereas between 2012 and 2015 the decrease in population amounted to 1.63%, the figure for the period 2000-2015 amounted to a final increase of 15.12%.

Andalusia (18%), Catalonia (16.1%), Madrid (13.8%) and C. Valenciana (10.7%), were the autonomous communities with the largest population in 2015, jointly representing more than 58.6% of the total.

With the exception of Ceuta and Melilla, all autonomous communities saw a reduction in population between 2012 and 2015. The population forecasts of the National Statistics Institute (INE, as per the Spanish acronym) for Spain foresee a population loss amounting to one million inhabitants in the next 15 years and 5.6 million in the next 50 years.

The first statistical forecasts on migration prepared by the INE (with provisional data corresponding to the first semester of 2015) establish that as of 1 July 2015, the population residing in Spain had decreased by

26,501, although population with Spanish citizenship increased by 1,042 people, mainly due to the processes for obtaining Spanish citizenship. During that first semester, the foreign population decreased by 27,543 people (0.6%).

In 2015, Spain contributed 9.1% of the entire EU-28 population. Only Germany, France, the United Kingdom and Italy showed a higher percentage. In 2000, the contribution to the population of the EU-28 was 8.2%, the fifth position in the ranking.

Definition of the Indicator:

The indicator presents the official population figures in Spain from the review of the Municipal Register as of 1 January each year. They are approved by Royal Decree and are published in the Spanish Official State Gazette. The figures corresponding to 2015 were approved by Royal Decree 1079/2015 of 27 November, declaring the population figures to be official, resulting from the review of the Municipal Register of Inhabitants of 1 January 2015.

Source:

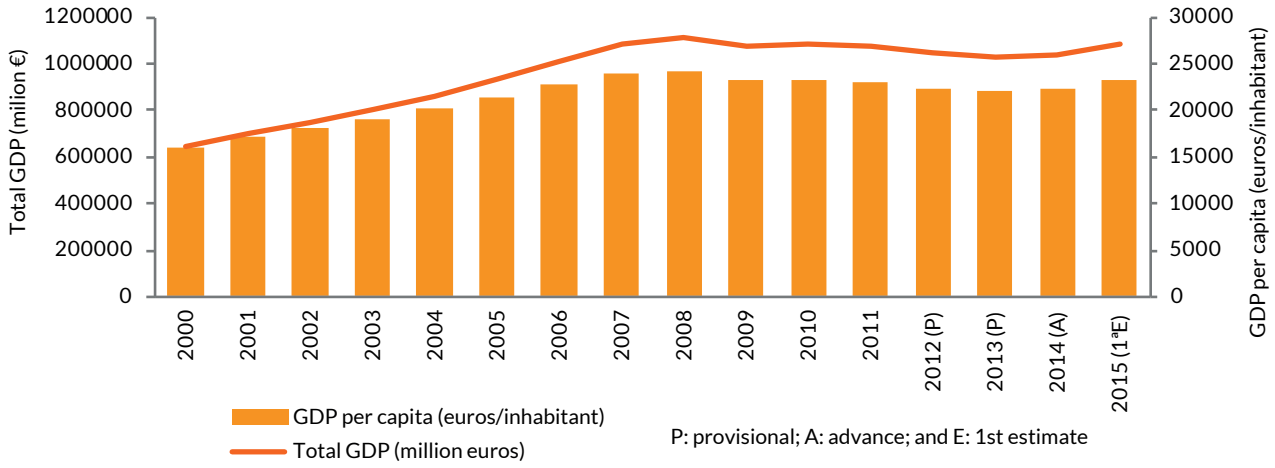
Spanish National Institute of Statistics (INE). Figures from the review of the Municipal Register as of 1 January each year (several years). Information on the website:

Recommended Websites:

- http://www.ine.es/inebmenu/mnu_padron.htm
- http://www.boe.es/boe/dias/2015/12/17/pdfs/BOE-A-2015-13745.pdf

Economic Evolution

Gross Domestic Product at market prices. Current Prices and 2010 Base. Total (millions of euros) and per capita (euros/inhabitant)



Source: INE

- ***In 2015, GDP in Spain grew 3.8% at market prices and 3.2% in terms of volume***
- ***In 2014, Spain contributed 8.3% of GDP of the EU-28 (in terms of purchasing power and at current prices)***
- ***With 22.06%, Spain had the second highest 2015 unemployment rate of the countries in the EU-28, whose average was 9.4%***

Gross Domestic Product (GDP) for 2015 (according to the first estimate), at more than 1,081 million euros (expressed at current prices), is the second best value for the period 2000-2015. This figure was only exceeded by the one corresponding to 2008, the year in which the maximum value since 2005 was reached, and it shows a recovery trend after the decrease experienced during the years affected by the recent economic and financial crisis. The analysis of all these years shows three trends: a very significant growth amounting to 72.7% between 2000 and 2008, a 7.6% retraction between 2008 and 2013 and a final increase of 4.8% between 2013 and 2015, with 3.8% growth in the last year (2014-2015).

Per capita, the evolution of GDP shows a similar trend peaking in 2008 (€24,274 per capita), which dropped to €22,134 per capita in 2013 and increased again in 2015 reaching €23,290 per capita. This ratio has changed in recent years due to a decrease in population, so the recent trend must not be directly associated with GDP growth.

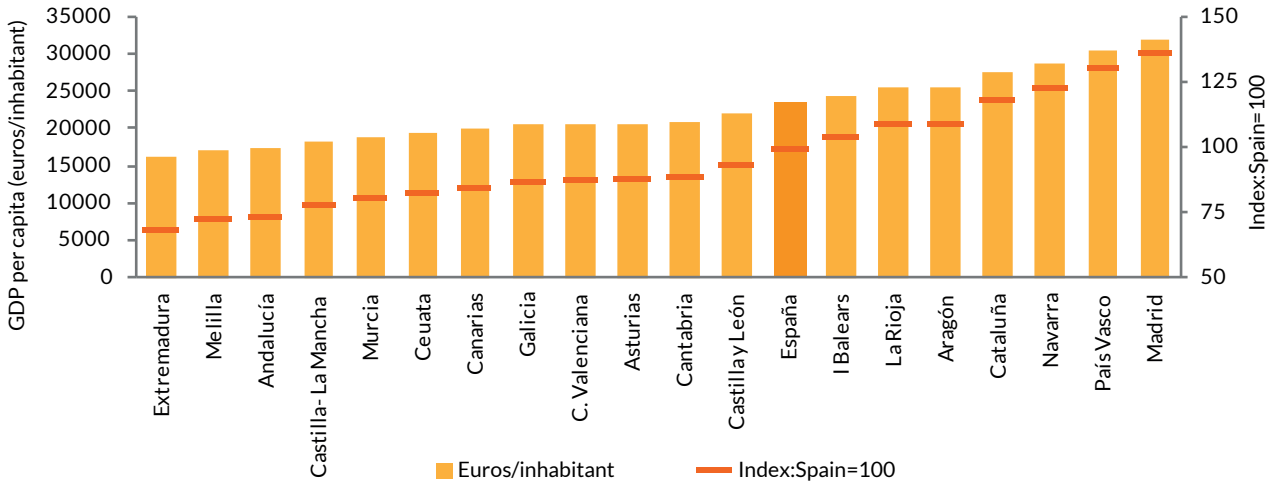
The Gross Value Added (GVA) of our economy showed a growth amounting to 67.5% in the period 2000-2015. By sector, the evolution was uneven, with a very significant increase in the service sector amounting to 92.6%, a remarkable one in the industrial sector, of 38.1%, and more moderate growth in the group comprising agriculture, livestock farming, forestry and fisheries, and a decline of 8.2% in the construction sector. We must

pay special attention to the growth experienced between 2000 and 2008, the year in which the slowdown of our economy became apparent. During that period, construction had grown 91.3%, services 84.1%, industry 51.9% and agriculture 5.8%. According to this growth scenario, the total GVA had increased by 74.9%.

In 2015, the contribution of the service sector to total GVA was 74.9%, whereas industry contributed with 17%, construction with 5.5% and agriculture with just 2.5%. In comparison with the distribution corresponding to the year 2000, the service sector is the only one whose weight in the national economy has increased, whereas the contribution of the others has decreased, almost to half its percentage in the case of agriculture and construction.

By autonomous community, Catalonia, Madrid and Andalusia generated more than 51% of the total GDP estimated for 2015. In terms of volume, the average growth of all of these, which ranged between 3.6% for C. Valenciana and 2.6% for Cantabria, exceeded the figure estimated for the EU-28 as a whole, which was 1.8%. Per capita, seven out of the 19 autonomous communities showed GDP values above the Spanish average of €23,290 per capita.

**GDP per capita at market prices (euros/inhabitant)
Current prices and 2010 Base.
Year 2015 (1st estimate)**



Source: INE

Within the European framework, Spain contributed in 2014 with 8.3% of GDP of the EU-28 (in terms of purchasing power parity -PPP- and at current prices), a similar value to that of 2013. As in previous years, Spain ranked fifth. Only four countries (Germany, France, the United Kingdom and Italy) made a greater contribution in 2014.

In 2015, there was a decrease in unemployment rates for a second year in a row. In 2015, this rate amounted to 22.06%, almost 2.4 percentage points lower than in 2014 (24.44%). However, the severity of the recent unemployment situation in Spain is alarming: unemployment in Spain increased from 8.2% in 2007 to 26.1% in 2013. In 2015, eight autonomous communities experienced unemployment rates higher than the Spanish average, the rates of which ranged from 13.83% in Navarre to 33.96% in Melilla.

In comparison to the EU-28, the unemployment rate of which was 9.4%, Spain ranked second, after Greece (unemployment rate of 24.9%).

Definition of the Indicator:

The indicator shows Gross Domestic Product (GDP) at market prices and at current prices, both in absolute figures and per inhabitant. Information on the year-on-year evolution in terms of volume and on the Gross Value Added by economic sector is also provided.

Methodological Notes:

- Spanish National Accounting (SNA) is prepared in accordance with the methodology of the European System of National and Regional Accounts (SEC 2010), compulsorily applied by all Member States of the European Union (EU), in accordance with the provisions of Regulation (EU) No. 549/2013 of the European Parliament and of the Council, of 21 May.
- GDP data corresponding to 2012 and 2013 are provisional; the ones corresponding to 2014 are included as preliminary data and the ones corresponding to 2015 are estimates.
- The estimate of GDP per inhabitant has been prepared based on the "Population figures as of 1 July", by the INE. The operation **Population Figures** offers information on the population residing in Spain, disaggregated based on demographic characteristics.

Source:

Spanish National Institute of Statistics (INE). Gross domestic product at market prices. Current prices. Information on the website: Information on the website: INEbase / Economy / Economic Accounts / Spanish Regional Accounting / Spanish Regional Accounting. 2010 Base / Functional Approach. GDP and its components / Last data published: 2010-2015 Series (30 March 2016) / Detailed results / 2000-2015 homogeneous series

Recommended Websites:

- http://www.ine.es/inebmenu/mnu_cuentas.htm
- http://ec.europa.eu/eurostat/data/database

2.2 AIR QUALITY

According to the World Health Organisation (WHO) more than 80% of people living in those urban areas in which the air quality is analysed are exposed to levels exceeding the limits set by the WHO. This situation occurs all over the world; however, the poorest cities are those that are most badly affected, and, within such cities, the elderly, children and those with the fewest resources are the ones that suffer the effects most acutely. The European Environment Agency, in its report "Air Quality in Europe. 2015 Report" considers air pollution to be an environmental and social problem with many negative effects for human health, eco-systems, building and climate and it is the main risk factor for environmental health in Europe.

Atmospheric pollution is a major concern due to its effects on human health and on the environment. The report "Environment at a Glance 2015. OECD Indicators", points out:

- Sulphur oxide (SO_x) and nitrogen oxide (NO_x) emissions continue their downward trend as a result of energy savings, fuel substitution, pollution control and technical progress.
- In half of the OECD (Organisation for Economic Cooperation and Development) countries, over 90% of the population is exposed to concentrations of fine particulates smaller than 2.5 microns (PM2.5) , which are damaging to health.

In Spain, the “National Plan for Air Quality and Protection of the Atmosphere 2013-2016: AIR Plan” approved in 2013 is the instrument established for the improvement of air quality and to guarantee the protection of health and ecosystems in Spain. It has been designed in order to ensure compliance with regulations on air

quality and national emission limits to promote of regional and local action plans, reduce emissions into the atmosphere, (particularly in those areas more severely affected), and raise awareness and improve the information available on air quality.

Air quality has a specific regulatory framework Royal Decree 102/2011, of 28 January, on the improvement of air quality, updates and repeals previous regulatory instruments and transposes Directive 2004/107/EC (relating to As, Cd, Hg, Ni and HAP) and Directive 2008/50/EC (on ambient air quality and cleaner air for Europe relating to: SO_2, NO_x, PM, Pb, C_6H_6, CO and O_3). Said regulatory framework also includes Act 34/2007, on air quality and the protection of the atmosphere, regulating the monitoring of air quality in order to establish the main policy lines of action in our country. This Royal Decree establishes Limit Values (if breached, improvement plans for air quality are to be prepared) and Target Values (if not reached, measures within reasonable expenditure limits are to be implemented).

It must be taken into account that the assessment of environmental air is carried out based on the concentration of pollutants in relation to the legally established values. In order to do so, fixed measurements, modelling techniques, representative measurement campaigns, research and indicative measurements are carried out. This follow-up may also be carried out by means of the combination of all or some of the aforementioned methods.

This chapter does not include the situation of SO_2 since there has been no recording of limit values being exceeded for this pollutant during recent years. Regarding the Hourly Limit Value (HLV) for the protection of human health, none of the areas assessed exceeded this hourly limit value in 2014, just as in the two previous years. Such was also the case of the Daily Limit Value (DLM) for the protection of human health and of the Critical Level for plant protection (former limit value for the protection of eco-systems).

The Ministry of Agriculture and Fisheries, Food and Environment publishes on an annual basis, the report "Assessment of Air Quality in Spain" prepared by the Air Quality Department of the Directorate General for Environmental Quality and Assessment and Natural Environment (http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/calidad-del-aire/Default.aspx). It is the baseline report on air quality in Spain. In order to create it the technicians responsible for its production collect data provided by the autonomous communities and carry out their assessment in line with EU regulations and based on the results of the technical work groups of the European Environment Agency.

Average annual NO_2 concentration

- With regard to the thresholds established by legislation, there is an increase in the proportion of stations with a lower NO_2 concentration and a decrease in the percentage of stations with a higher concentration.
- Stations with average concentration values of NO_2 exceeding the Annual Limit Value (ALV), which accounted for 20.1% in 2001, decreased to 3.2% in 2014.
- The number of stations used in the assessment doubled, from 244 stations in 2001 to 494 in 2014.

Average annual PM2.5 Concentration

- Since 2008, the percentage of stations superseding the Annual Limit Value is zero.
- The percentage of stations exceeding the Upper Evaluation Threshold decreased from 21.2% in 2008 to 2.1% in 2014.
- As in the case of PM10, the percentage of stations with lower PM2.5 concentrations increased: the percentage of stations with concentrations under the Lower Evaluation Threshold increased from 47.5% in 2008 to 77.7% in 2014.

Regional background air quality: average concentrations of So_2, No_2, PM10, PM2.5 and O_3

- Between 2003 and 2015, regional background air quality in Spain shows a positive trend with reductions in average concentrations of SO_2, PM2,5 y PM10 and NO_2.
- Likewise, O_3 levels show a decreasing trend amounting to 9.6%, mainly due to the major reduction experienced in 2014.

Average annual PM10 Concentration

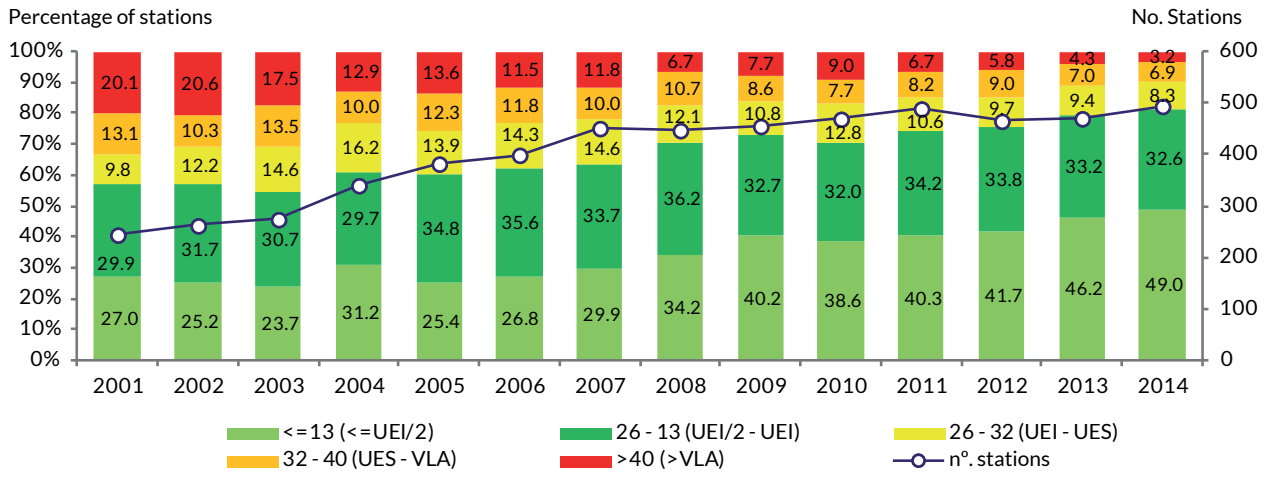
- Between 2001 and 2014 there was a major decrease in the percentage of stations in which the Annual Limit Value and the Upper Evaluation Threshold of PM10 were exceeded: in the first instance, from 33.8% to 0.2% and in the second, from 35.6% to 4.8%.
- The number of stations with lower PM10 concentrations increased: the percentage of stations with concentrations under the Lower Evaluation Threshold increased from 18.8% in 2001 to 56.6% in 2014.

Average annual O_3 concentration

- In Spain, there are high ozone levels in suburban or rural areas due to a high solar irradiance and the emission of its precursors.
- Regarding the human health, there is a slight improvement in recent years due to a reduction in the percentage of stations with O_3 concentrations exceeding the Target Value.
- The percentage of stations with concentrations under the Long-Term Target increased in recent years and in 2014 represented 20.5%.

Average annual NO_2 concentration

Average annual NO_2 concentration: stations used in the assessment of air quality classified according to the different ranges established in the relevant regulations (%)



Source: MAGRAMA

- *With regard to the thresholds established by legislation, there is an increase in the proportion of stations with a lower NO_2 concentration and a decrease in the percentage of stations with a higher concentration*
- *Stations with average concentration values of NO_2 exceeding the Annual Limit Value (ALV), which represented 20.1% in 2001, decreased to 3.2% in 2014*
- *The number of stations used in the assessment doubled, from 244 stations in 2001 to 494 in 2014*

The annual average concentration, measured in all stations used in the evaluation of air quality and classified by evaluation thresholds, reveals a favourable trend for nitrogen oxides (measured as NO_2).

This represents an overview of the positive trend of average nitrogen dioxide values, notwithstanding other situations occurring in specific areas with exceptional episodes of nitrogen dioxide concentrations exceeding limit values for human health.

The percentage of stations associated with each classification range shows a decrease in the percentage of stations with a higher average concentration of NO_2 in favour of an increase in those with a lower percentage. In particular, in the year 2001, 27.0% of stations showed concentration values under the Lower Evaluation Threshold (LET), whereas in 2014 the percentage was 49.0%, almost double. On the other hand, stations with average concentration values of NO_2 exceeding the Annual Limit Value (ALV), which represented 20.1% in 2001, decreased to 3.2% in 2014

The number of stations used in the assessment increased year after year, and it virtually doubled, from 244 stations in 2001 to 494 in 2014. The increase in the density of points in control networks has undoubtedly

influenced a better assessment of air quality in general terms, since it is measured in all type of areas (urban, suburban and background areas).

The report "Assessment of Air Quality in Spain 2014" published by MAGRAMA, includes a summary of that year's situation as regards the three legally established values. Regarding the protection of human health, the municipality of Madrid was the only one in which the NO_2 hourly limit value was exceeded (as was the case for 2013). Regarding the annual limit value of NO_2, excessive limit values were recorded in six areas, although one of them has been granted a compliance extension until the 1 January 2015 by the European Commission. It must be highlighted that in none of the areas in which the protection of the vegetation was assessed was the critical NO_x level exceeded.

The report of the European Environment Agency "*Air Quality in Europe — 2015 Report* (EEA Report No. 5/2015)" states that in 2013, 14% of all stations with sufficient data volume, recorded values exceeding the NO_2 limits. It must be mentioned that the highest concentrations, as well as 93% of the cases in which limit values were exceeded, occurred in traffic stations, whereas in background stations limit values were not exceeded.

Definition of the Indicator:

Regarding nitrogen oxides (measured as NO_2), the indicator shows the evolution of the Annual Limit Value by means of the percentage of stations included in each one of the five ranges in which the average annual concentration of NO_2 (measured as $\mu g/m^3$) is classified, referred to the Lower Evaluation Threshold (LET), Upper Evaluation Threshold (UET) and the Annual Limit Value (ALV). These ranges are:

- NO_2 concentrations lower or equal to LET/2 (13 $\mu g/m^3$)
- NO_2 between the LET/2 and the LET (13-26 $\mu g/m^3$)
- NO_2 between the LET and the UET (26-32 $\mu g/m^3$)
- NO_2 between the UET and the ALV (32-40 $\mu g/m^3$)
- NO_2 exceeding the ALV (> 40 $\mu g/m^3$).

Methodological Notes:

- Having their origin in combustion processes (transportation, industrial facilities, power generation, etc.), highest NO_x levels are usually reached in major urban areas and in the surrounding areas of communication routes with heavier traffic mainly due to diesel engines.
- Air quality targets established by current regulations for nitrogen oxides are:
  - NO_2 hourly limit value (HLV) for the protection of human health (compliance date: 1 January 2010): 200 $\mu g/m^3$. It is the average value in 1 hour which must not be exceeded on more than 18 occasions per calendar year
  - NO_2 annual limit value (ALV) for the protection of human health (compliance date: 1 January 2010): 40 $\mu g/m^3$ during the calendar year
  - Limit value (new critical level according to Directive 2008/50/EC and RD 102/2011) of NO_x for the protection of vegetation: 30 $\mu g/m^3$ during the calendar year
- The indicator refers only to Annual Limit Value of NO_2, due to the fact that, even though nitrogen oxides include both nitrogen monoxide (NO) and nitrogen monoxide (NO_2), 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. Moreover, NO oxidises easily, generating NO_2.
- References on values legally established may be checked in the reports "Assessment of Air Quality in Spain 2014" and "Assessment of Air Quality in Spain: Evolution 2001-2012. Update 2014 (Chapter 4)", both prepared by the Directorate-General for Environmental Quality and Assessment and Natural Environment of the MAGRAMA.

Source:

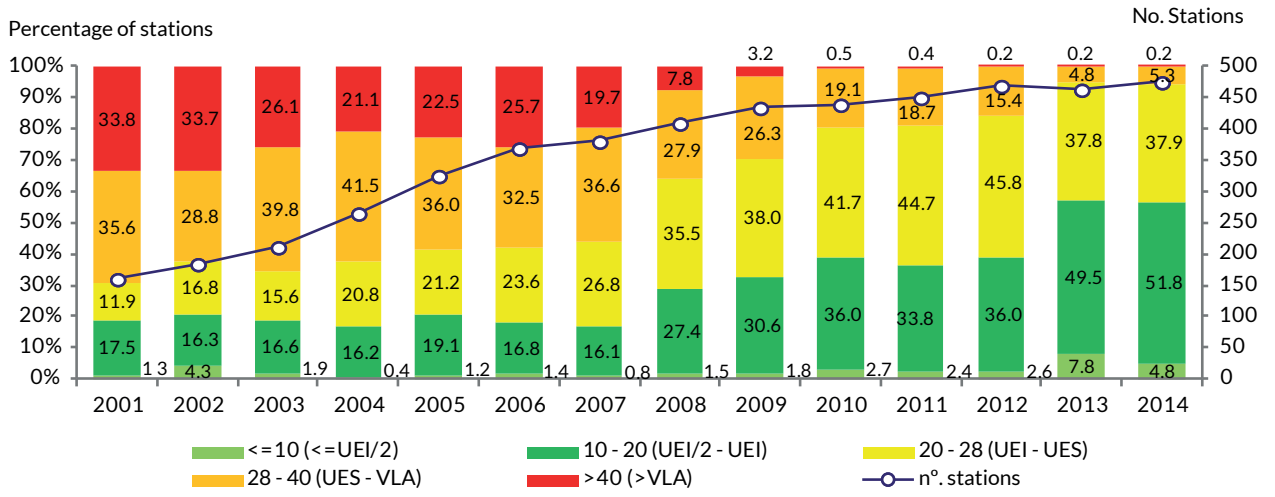
Ministry of Agriculture, Food and the Environment, 2016. Air Quality Database. Directorate-General for Environmental Quality and Assessment and Natural Environment. Data provided by means of express request.

Recommended Websites:

- http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/
- http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/calidad-del-aire/estudios/
- 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.eea.europa.eu/data-and-maps/indicators/exceedance-of-air-quality-limit-3/assessment-1

Average annual PM10 Concentration

Average annual PM10 concentration: stations used in the assessment of air quality classified according to the different ranges established in the relevant regulations (%)



Source: MAGRAMA

- ***Between 2001 and 2014 there was a major decrease in the percentage of stations in which the Annual Limit Value and the Upper Evaluation Threshold of PM10 were exceeded: in the first instance, from 33.8% to 0.2% and in the second, from 35.6% to 4.8%***
- ***The number of stations with lower PM10 concentrations increased: the percentage of stations with concentrations under the Lower Evaluation Threshold increased from 18.8% in 2001 to 56.6% in 2014***

The distribution of stations used to monitor particulates with a diameter under 10 microns in the air quality assessment process shows a major increase in the percentage of stations in which the Annual Limit Value (ALV) and the Upper Evaluation Threshold (UET) is exceeded. Thus, in 2001, 33.8% of stations exceeded the ALV, whereas in 2014 this percentage was only 0.2%. Likewise, the UET was formerly exceeded in 35.6% of stations whereas in 2014 it was exceeded in 5.3%.

Moreover, the number of stations with lower PM10 concentrations increased during the period: the percentage of stations with concentrations under the Lower Evaluation Threshold (LET) increased from 18.8% in 2001 to 56.6% in 2014.

The number of stations used in the assessment has multiplied three-fold, from 160 stations with sufficient data volume in 2001, to 475 in 2014. Regarding this analysis, it must be taken into account that Spain is heavily influenced by the intrusion of African dust, which leads to a natural increase in particulate concentration.

Even so, after discounting intrusions from the Sahara, the Annual Limit Value was exceeded in one area, and the Daily Limit Value was exceeded in three areas. This is explained in the MAGRAMA publication "Assessment of Air Quality in Spain 2014", which describes air quality in Spain for the two legally established values of PM10.

Regarding PM10 concentration, the report by the European Environment Agency "*Air quality in Europe — 2015 report* (EEA Report no. 5/2015)" includes instances in which the limit value was exceeded in most of Europe in 2013. As regards the daily limit value, which is more restrictive than the annual limit value and, therefore, more strict, only in six out of the 28 member States of the EU were daily limit values not exceeded. 95% of the times limit values were exceeded took place at stations located in urban and suburban areas.

Definition of the Indicator:

Regarding particles with a diameter over 10 microns (PM10), the indicator shows the evolution of the Annual Limit Value by means of the percentage of stations included in each one of the five ranges in which the average annual concentration of PM10 (measured as µg/m^3) is classified, referred to the Lower Evaluation Threshold (LET), Upper Evaluation Threshold (UET) and the Annual Limit Value (ALV). These ranges are:

- PM10 concentrations lower or equal to LET/2 (10 µg/m^3)
- PM10 between the LET/2 and the LET (10-20 µg/m^3)
- PM10 between the LET and the UET (20-28 µg/m^3)
- PM10 between the UET and the ALV (28-40 µg/m^3)
- PM10 exceeding the ALV (> 40 µg/m^3).

Methodological Notes:

- 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 SO_2, NO_x, NH_3 and NMVOC). In urban areas, most particles directly arise 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.
- Air quality targets established by current regulations for PM10:
  - Daily limit value (DLV) of PM10 for the protection of human health (compliance date: 01 January 2005): 50 µg/m^3. It is the average value in 24 hours which must not be exceeded on more than 35 occasions per calendar year.
  - Annual limit value (ALV) of PM10 for the protection of human health (compliance date: 01 January 2005): 40 µg/m^3 during the calendar year.
- References on values legally established may be checked in the reports "Assessment of Air Quality in Spain 2014" and "Assessment of Air Quality in Spain: evolution 2001-2012. Update 2014 (Chapter 4)", both prepared by the Directorate-General for Environmental Quality and Assessment and Natural Environment of the MAGRAMA.
- As in the case of the rest of the pollutants, this indicator offers an overview and shows a favourable trend which does not reflect other situations that may occur in specific areas with exceptional episodes of high pollutant concentrations having major consequences for human health. It must be highlighted that regarding PM10, the ALV is less restrictive that the DLV.

Source:

Ministry of Agriculture, Food and the Environment, 2016. Air Quality Database. Directorate-General for Environmental Quality and Assessment and Natural Environment. Data provided by means of express request.

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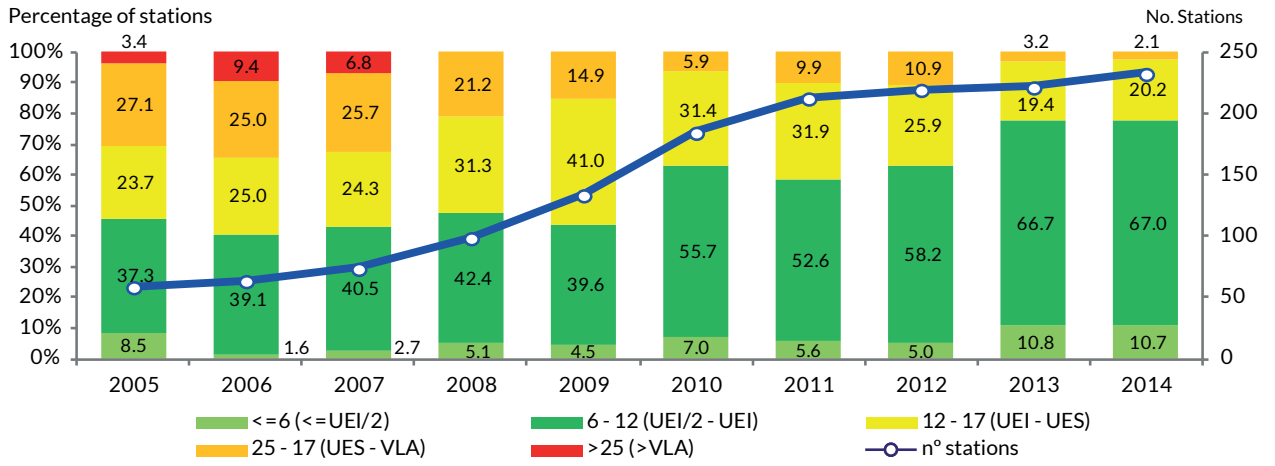
- http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/calidad-del-aire/mediciones/Visor_CA.aspx
- http://www.eea.europa.eu/data-and-maps/indicators/exceedance-of-air-quality-limit-3/assessment-1

Average annual PM2.5 Concentration

Average annual PM2.5 concentration: stations used in the assessment of air quality classified according to the different ranges established in the relevant regulations (%)



Source: MAGRAMA

- ***Since 2008, the percentage of stations superseding the Annual Limit Value is zero***
- ***The percentage of stations exceeding the Upper Evaluation Threshold decreased from 21.2% in 2008 to 2.1% in 2014***
- ***As in the case of PM10, the percentage of stations with lower PM2.5 concentrations increased: the percentage of stations with concentrations under the Lower Evaluation Threshold increased from 47.5% in 2008 to 77.7% in 2014***

The evolution of the distribution of the stations assessing PM2.5 concentrations shows a very positive trend. If the stations are divided into the five ranges established, fully applicable since 2015, it is evidenced that in the year 2008, when Directive 2008/50 on ambient air quality and cleaner air for Europe came into force, there were no longer stations exceeding the Annual Limit Value (ALV). Regarding the stations exceeding the Upper Evaluation Threshold, their number decreased from 21 in 2008 to 5 in 2014.

Such reduction in the proportion of stations with a higher concentration produced an increase in the number of stations with a lower concentration of PM2.5. Specifically, the number of stations with concentrations lower than those established in the Lower Evaluation Threshold (LET) increased from 47 to 181 between 2008 and 2014. Therefore, the percentage corresponding to these stations increased from 47.5% to 77.7%, respectively. Out of these, the ones with a lower concentration increased from 5.1% in 2005 to 10.7% in 2014; however, this percentage presents annual fluctuations within the series.

It must be highlighted that, in the case of PM2.5, the number of stations used in the assessment has multiplied almost four-fold from 2005 (with 59 stations) and by almost 2.4 times from 2008 (with 99 stations), reaching 233 stations in 2014 (an increase of 295% in nine years and of 135.4% in the six years from 2008 to 2014).

As in the case with PM10, dust intrusions from Africa are a major source of such particulates in Spain, which contributes to the existence of a natural input affecting the final concentration. (However, the intrusion from the Sahara affects the PM10 range to a greater extent than the PM2.5 range).

The report "Evaluation of Air Quality in Spain 2014" (MAGRAMA, 2016) describes the air quality in Spain in detail, including the legally established values of PM2.5. None of the 135 areas defined for the evaluation of PM2.5 particulates exceeded the Target Value nor the Limit Value plus the tolerance margins in 2014.

At a European level, PM2.5 concentration in 2013 exceeded the established target (annual average value applicable from 2010 which became the Annual Limit Value as of 2015) in, at least, one station in seven countries of eastern Europe (only referring to stations with more than 75% valid data). Stations located in urban and suburban areas were the ones with the highest occurrence (92% of cases). Further information may be found in the report by the European Environment Agency "*Air quality in Europe – 2015 report* (EEA Report no. 5/2015)".

Definition of the Indicator:

Regarding particles with a diameter under 2.5 microns (PM2.5), the indicator shows the evolution of the Annual Limit Value by means of the percentage of stations included in each one of the five ranges in which the average annual concentration of PM10 (measured as µg/m^3) is classified, referred to the Lower Evaluation Threshold (LET), Upper Evaluation Threshold (UET) and the Annual Limit Value (ALV). These ranges are:

- PM2.5 concentrations lower or equal to LET/2 (6 µg/m^3)
- PM2.5 between the LET/2 and the LET (6-12 µg/m^3)
- PM2.5 between the LET and the UET (12-17 µg/m^3)
- PM2.5 between the UET and the ALV (17-25 µg/m^3)
- PM2.5 exceeding the ALV (> 25 µg/m^3).

Methodological Notes:

- 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 directly arise from road traffic (see methodological notes of PM10 indicator).
- Air quality targets established by current regulations for PM2.5 are:
  - Annual target value (ATV) of PM2.5 for the protection of human health (compliance date: 1 January 2010) 25 µg/m^3. During a calendar year.
  - Annual limit value (ALV) of PM2.5 for the protection of human health (compliance date: 01 January 2015): 25 µg/m^3. For 2014 the AVL is 26ug/m^3 (25 µg/m^3 + 1 µg/m^3 corresponding to the tolerance margin).
- References on values legally established may be checked in the reports "Assessment of Air Quality in Spain 2014" and "Assessment of Air Quality in Spain: Evolution 2001-2012. Update 2014 (Chapter 4)", both prepared by the Directorate-General for Environmental Quality and Assessment and Natural Environment of the MAGRAMA.
- As in the case of the rest of pollutants, this indicator offers an overview and shows a favourable trend which does not reflect other situations that may occur in specific areas with exceptional episodes of high pollutant concentrations having major consequences for human health.

Source:

Ministry of Agriculture, Food and the Environment, 2016. Air Quality Database. Directorate-General for Environmental Quality and Assessment and Natural Environment. Data provided by means of express request.

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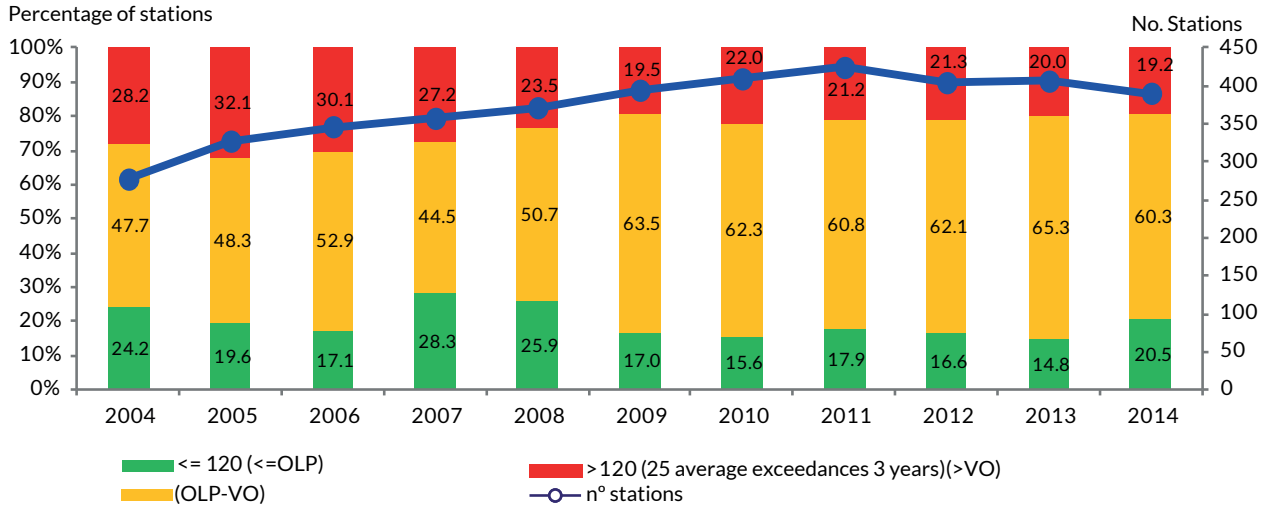
- http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/calidad-del-aire/mediciones/Visor_CA.aspx
- http://www.eea.europa.eu/data-and-maps/indicators/exceedance-of-air-quality-limit-3/assessment-1

Average annual O_3 concentration

O_3 health: stations used in the evaluation of air quality classified according to different ranges established in the legislation (%)



Source: MAGRAMA

- ***In Spain, there are high ozone levels in suburban or rural areas due to a high solar irradiance and the emission of its precursors***
- ***Regarding the human health, there is a slight improvement in recent years due to a reduction in the percentage of stations with O_3 concentrations exceeding the Target Value***
- ***The percentage of stations with concentrations under the Long-Term Target increased in recent years and in 2014 represented 20.5%***

In 2014, tropospheric ozone shows, as in past years, high levels in suburban and rural areas. The causes for this include the high solar irradiance affecting our country and the emission of its precursors (mainly NO_x and volatile organic compounds).

However, regarding the human health, there has been a slight improvement in recent years with a reduction of the percentage of stations with O_3 concentration exceeding the Target Value (TV: 120 µg/m^3 and 25 exceedances in 3 years). In fact, 2014 is the year with the lowest percentage of stations where such TV is exceeded since 2004.

Moreover, the percentage of stations with an average concentration between the Long Term Target (LTT) and the TV shows an increase as well, from 47.7% in 2004 to 60.3% in 2014. Regarding the percentage of stations with ozone concentrations under the LTT, they have increased in the last few years and in 2014 they have increased in relation to 2013, going from 14.8% to 20.5%.

Air quality in Spain is assessed in a detailed and comprehensive manner in the report "Evaluation of Air Quality in Spain 2014" (MAGRAMA, 2016). Regarding ozone and the protection of human health, a total of 135 areas were assessed in 2014. Out of those areas, 44 showed values over the TV, 74 showed values between the TV and the LTT, the other 17 showed values under the LTT.

Between 2004 and 2014, the number of stations increased by 40.8%, from 277 to 390, respectively. This circumstance must also be taken into consideration when assessing the aforementioned evolution and the analysis carried out.

According to the European Environment Agency ("*Air quality in Europe – 2015 report* (EEA Report n. 5/2015)", the target value for the protection of human health was exceeded 25 times in 18 out of 28 member States of the EU, among which Spain was included. Besides, 28% of all stations with sufficient data volume showed ozone exceedances.

Definition of the Indicator:

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

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

Methodological Notes:

- Air quality targets established by current regulations for the protection of human health regarding ozone are:
  - O_3 Target Value (TV) for the protection of human health (compliance date: 1 January 2010; period 2010-2012) 120 µg/m^3. Maximum daily level of eight-hour running average. It must not be exceeded more than 25 times on average within a 3-year period.
  - Long Term Target (LTT) for the protection of human health (compliance date: undefined) 120 µg/m^3. Maximum daily level of eight-hour running average within a calendar year.
- References to values legally established may be checked in the reports "Assessment of Air Quality in Spain 2014" and "Assessment of Air Quality in Spain: Evolution 2001-2012. Update 2014 (Chapter 4)", both prepared by the Directorate-General for Environmental Quality and Assessment and Natural Environment of the MAGRAMA.
- As in the case of the rest of pollutants, this indicator offers an overview and shows a favourable trend which does not reflect other situations that may occur in specific areas with exceptional episodes of high pollutant concentrations having major consequences for human health.
- O_3 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_3 is generated secondarily from other precursor gases (NO_x 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.

Source:

Ministry of Agriculture, Food and the Environment, 2016. Air Quality Database. Directorate-General for Environmental Quality and Assessment and Natural Environment. Data provided by express request.

Recommended Websites:

- http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/
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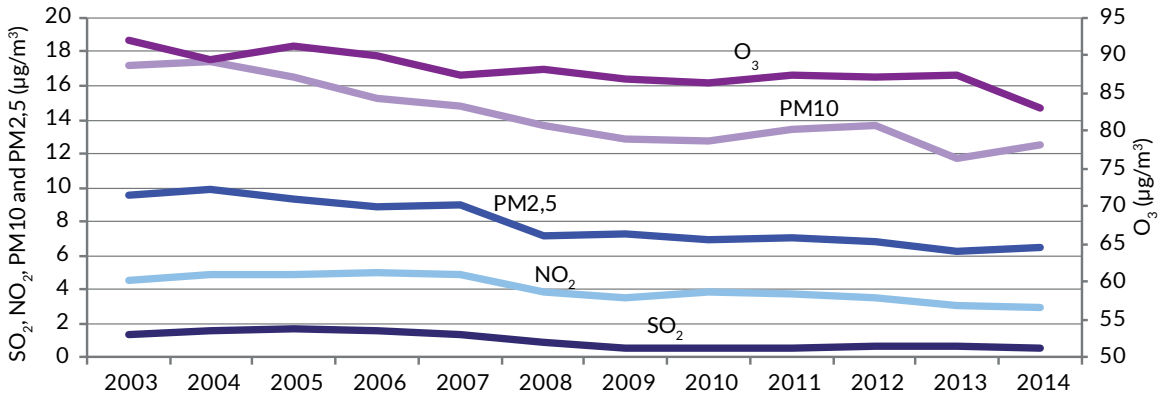
- http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/calidad-del-aire/mediciones/Visor_CA.aspx
- http://www.eea.europa.eu/data-and-maps/indicators/exceedance-of-air-quality-limit-3/assessment-1

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

Average concentration of annual averages at background stations of the EMEP Network



Note: Particulates: daily data; SO_2 and NO_2: hourly data; O_3: daily eight-hour maximum values

Source: MAGRAMA

- ***Between 2003 and 2015, regional background air quality in Spain shows a positive trend with reductions in average concentrations of SO_2, NO_2, PM2.5 and PM10***
- ***Likewise, O_3 levels show a decreasing trend amounting to 9.6%, mainly due to the major reduction experienced in 2014***

Throughout the period between years 2003 and 2014, there has been an improvement in the regional background air quality in Spain characterised by a significant decrease in average concentrations of SO_2, major reductions in NO_2 and particulate concentrations. Reduction of ozone concentrations have been less significant than those corresponding to other pollutants. In particular, SO_2 levels decreased by 57.9%, with an especially significant reduction between 2007 and 2009. On the other hand, NO_2, PM2.5 and PM10 concentrations show reductions by 35.1%, 32.8% and 27.4%, respectively.

However, O_3 shows a slightly different behaviour, with a lower reduction in absolute terms of its levels (estimated by means of daily maximum eight-hour values) amounting to just 9.6% throughout the period and a trend characterised by steady concentrations around 87 µg/m^3 between 2007 and 2013. It must be considered at all times that this pollutant, due to its secondary origin (originating from the photochemical reaction between nitrogen oxides and volatile organic compounds with the aid of solar radiation) tends to show the highest concentrations in those areas away from sources of pollution and cities. This behaviour explains the between the reduction in the emissions of its precursors and the final background concentration estimated in areas away from source locations: both pollutants reduced their global emissions from 2003 and 2014 to a greater extent: 42.7% corresponding to NO_x and 35.6% corresponding to NMVOCs).

Regarding last year's situation, only particulate emissions have increased in 2014 (6.7% for PM10 and 3.4% for PM2.5), reversing the trend of decreases occurring in 2013. On the contrary, between 2013 and 2014, SO_2 decreased by 11.9%, whereas NO_2 decreased by 6.1% and O_3 by 4.8%.

It must be taken into consideration that this trend shows a general average behaviour and therefore it must be highlighted that there might be exceptional events in which concentrations increase leading to exceedances of the legally established values.

Definition of the Indicator:

The indicator shows the average concentrations corresponding to the annual average of SO_2, NO_2, PM10, PM2.5 and O_3 in the background stations of the EMEP/VAG/CAMP network. The concentration of particles is calculated from daily data, whereas the average concentrations of SO_2 and NO_2 are calculated using hourly data. For the calculation of average O_3 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. 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 CAMP 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/CAMP 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.
- The Spanish EMEP/VAG/CAMP Network, allows for compliance with the commitments for the measurement of pollutants of EMEP, GAW and CAMP programmes. Data obtained, as well as establishing background pollution levels of a certain region, allow us to evaluate transportation from emission sources located far away. Both those pollutants legally regulated as well as other pollutants which are not regulated in the relevant laws, used in scientific researches, are analysed (supporting local and autonomic networks).
- References to legally established values may be checked in the report “Evaluation of Air Quality of Spain 2014”, prepared by the Air Quality Department of the Directorate General for Environmental Quality and Assessment and Natural Environment of the MAGRAMA.

Source:

Ministry of Agriculture, Food and the Environment, 2016. Air Quality Database. Directorate-General for Environmental Quality and Assessment and Natural Environment. Data provided by means of express request

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- http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/calidad-del-aire/mediciones/Visor_CA.aspx

2.3 EMISSIONS TO THE ATMOSPHERE AND CLIMATE CHANGE

On 2 December 2015, the 21st session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21) came to an end in Paris, as did the 11th session of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol (COP-MOP11).

The COP21 ended with the adoption of the Paris Agreement, which established the global framework for the fight against climate change from 2020, aimed at holding the increase in the global average temperature to well below 2ºC above pre-industrial levels and pursuing additional efforts to make it possible for global warming not to exceed 1.5ºC. It is an historic agreement for the fight against climate change, promoting a transition towards a low-emission economy resilient to climate change. The agreement, which is legally binding, includes 189 National Plans fighting against this phenomenon, covering 97% of greenhouse gas emissions.

The Agreement was authorised by the Council of Ministers on 8 April 2016 and sets out an increase in the intensity of the commitments, with increasingly ambitious targets, and proposes a five-year review cycle including an evaluation of the degree of compliance with all national measures implemented so as to meet the 2ºC target. In 2018, national contributions will be assessed, possibly leading to the adoption of more ambitious targets in 2020.

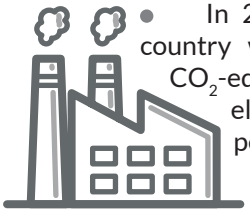
On the other hand, regarding the trading of emission rights, at the end of 2015, Spain announced the individual allocation proposal of 3,404,557 allowances corresponding to the period 2013-2020, finally approved by the Council of Ministers in April 2016.

Among the targets of the 2030 climate and energy framework (adopted in 2014), we may highlight the reduction of, at least, 40% of greenhouse gas emissions (from 1990 levels), a 27% share for renewable energy, and a 27% improvement in energy efficiency.

In order to reduce air pollution in all countries, in 2013 the EU adopted the Clean Air Policy Package, establishing targets for the reduction of the effects air pollution poses to health and to the environment until 2030. It included regulatory proposals to implement more stringent regulations on emissions and air pollution. Within this framework, during 2015, the EU and member States have continued working on the proposal for a new Directive on national emission ceilings and another Directive for the reduction of pollution from mid-size combustion plants.

Greenhouse gas emissions

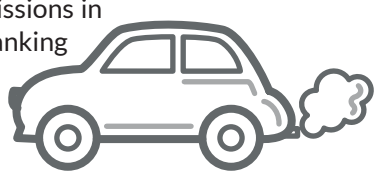
- In 2014, GHG emissions increased by 0.45%. It is the first annual increase since the decline began in 2007.
- Between 1990 and 2014, GHG emissions increased by 15%.
- In 2014, Spain was responsible for 7.7% of all GHG emissions of the EU-28.



- In 2014, Spain was the UE-28 country with the thirteenth lowest CO_2-eq per Euro of GDP and the eleventh lowest emission rate per capita.

Particulate Matter Emissions

- Between 2000 and 2014, there was a decrease of 32.8% in PM2.5 emissions and of 31.8% in PM10 emissions.
- In 2013, Spain was responsible for 5% of total PM10 emissions in the EU-28, ranking 7th.



"Carbon Footprint" Register

- Between May 2014 and 31 December 2015, 397 applications for registration on the Carbon Footprint Register, compensation and absorption projects of carbon dioxide were submitted.
- Of all of these, only 2.8% were rejected, whereas 83.1% were registered. 14.1% were pending analysis at the end of the year.

Acidifying and eutrophying gas emissions and tropospheric ozone precursors

- Between 1990 and 2014, aggregated emissions of acidifying and eutrophying gases decreased by 59.8%, while tropospheric ozone precursors decreased by 40%.

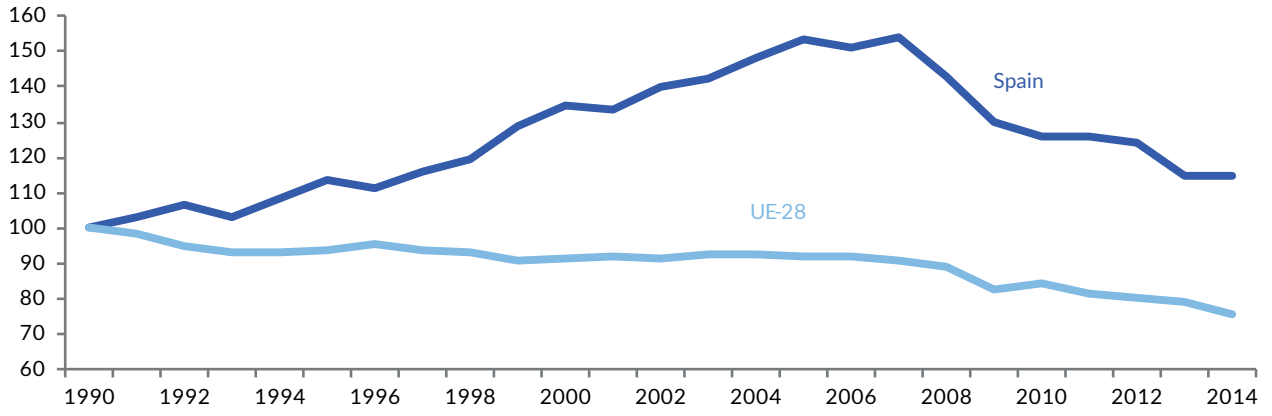
- Three out of the four pollutants included in the Ceilings Directive are compliant since 2010. Only NH_3 presents obstacles.

Spanish Carbon Fund Clima Projects

- 2015, with 62 projects selected, was the year with the highest number of projects since the first call was launched in 2012.
- The residential and the agricultural sectors are those with the highest number of proposals selected in 2015 (19% and 17% respectively).
- Clima Projects aim at preventing emissions in different sectors such as transportation, residential, waste, agriculture and livestock farming, industry (not included in the emissions trading scheme) and fluorinated gases.

Greenhouse Gas Emissions

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



Source: AEMA

- ***In 2014, GHG emissions increased by 0.45%. It is the first annual increase since the decline began in 2007***
- ***Between 1990 and 2014, GHG emissions increased by 15%***
- ***In 2014, Spain was responsible for 7.7% of all GHG emissions of the EU-28***
- ***In 2014, Spain was the UE-28 country with the thirteenth lowest CO_2-eq per Euro of GDP and the eleventh lowest emission rate per capita***

In the year 2014, greenhouse gas emissions (GHG) increased by 0.45%. It was the first annual increase experienced since 2007, when the maximum value for the period from 1990 was reached and the downward trend began. The cause of this increase was mainly the rise of emissions in the industrial sector (by 3.7%) and in the agricultural sector (by 3.8%). On the other hand, emissions from transportation only increased by 0.5%, while those from the energy sector decreased by 0.5%.

Between the 285.93 million tonnes emitted in 1990 and the 328.93 million tonnes emitted in 2014 (both measured in CO_2-eq) there was an increase of 15%. The analysis of the contribution of each gas to the total amounts shows that there is a similar distribution to that of the previous year: CO_2 was the highest emitted gas (77%), followed by CH_4 (12%) and N_2O (6%). The group of fluorinated gases produced the other 5% of the CO_2-eq emitted.

The energy processing sector was responsible for 72.4% of total emissions (also CO_2-eq), a contribution which is slightly below that of 2013, amounting to 73.1%. Within this sector, transportation emitted 24.3%, electricity production 23% and the manufacturing industry and construction 12.3%, all with respect to the total volume emitted.

On the other hand, emissions from industrial processes represented 11.5% of the total, and those from agriculture, 11.4%. Emissions associated with waste management produced 4.8% of the total, the same amount as in 2013.

Between 1990 and 2014, all sectors increased their emissions to different extents: agriculture by 7%, energy by 13%, industry by 24% and waste management 75%.

Emissions reported under the emissions trading scheme in 2014 amount to 124.85 million tonnes of CO_2-eq, 1.7% more than in 2013. According to such information, sectors included in the European Emissions Trading Scheme (ETS) were responsible for 38% of emissions, whereas diffuse sectors generated 62% of emissions.

According to the European Environmental Agency, GHG emissions by the EU-28 reduced by 24.4% between 1990 and 2014 (without taking into account those arising from land use, land-use change and forestry activities and those arising from air travel). Available trend information shows that the EU is on the right path to achieving a 20% reduction in GHG emissions in 2020 with respect to 1990.

Within the scope of the EU, in 2014 Spain produced 7.7% of total CO_2-eq emissions. In addition, it is the thirteenth country with the lowest CO_2-eq per Euro/GDP with 315.92 kg CO_2-eq/€1,000 and the eleventh country with the lowest emissions per inhabitant (7.07 t CO_2-eq/inhab.).

Definition of the Indicator:

The indicator presents the aggregated emissions of greenhouse gases included in the Kyoto Protocol, expressed in CO_2-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_2, CH_4, N_2O, HFCs, PFCs and SF_6), jointly expressed as CO_2 equivalent (CO_2-eq) as an index 1990=100 and 1995=100 for fluorinated gases. For that purpose, the atmospheric warming potentials of the 4th 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 "Land use, Land-use change and forestry activities". This group includes the emissions or absorption of greenhouse gases related to forests (including fires), crops, grazing lands, as well as human settlements (associated with deforestation and conversion of crops and grazing lands in settlements).

Source:

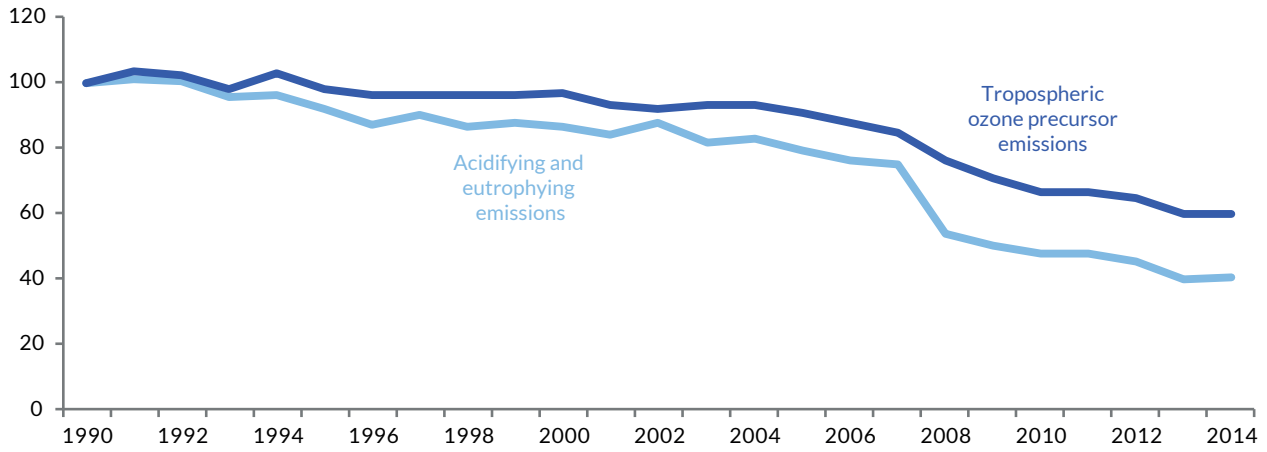
- Ministry of Agriculture, Food and the Environment, 2016. Spanish Inventory of Greenhouse Gases. Series 1990-2014. Summary Report. Madrid, April 2016. Directorate-General for Environmental Quality and Assessment and Natural Environment. MAGRAMA.
- European Environmental Agency. EEA greenhouse gas - 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://ec.europa.eu/clima/policies

Acidifying and Eutrophying Gas Emissions and Tropospheric Ozone Precursors

Acidifying and eutrophying gas emissions and tropospheric ozone precursors
Index 1990=100



Source: MAGRAMA

- ***Between 1990 and 2014, aggregated emissions of acidifying and eutrophying gases decreased by 59.8%, while tropospheric ozone precursors decreased by 40%***
- ***Three out of the four pollutants included in the Ceilings Directive are compliant since 2010 Only NH_3 presents obstacles***

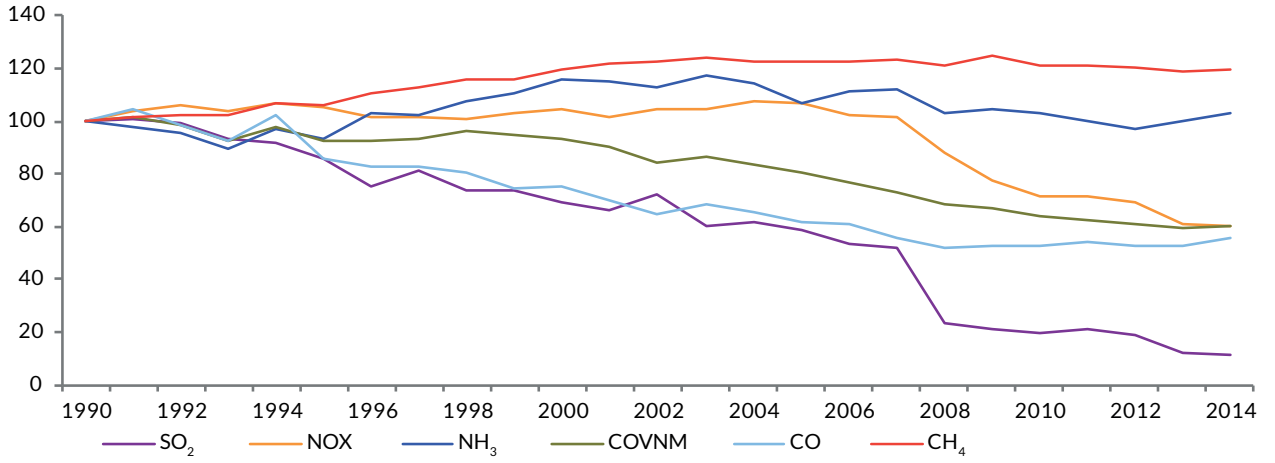
Since 1990 and until 2014, total emissions of all acidifying and nitrifying gases and eutrophying gases (both of them estimated by means of weighted aggregation) decreased by 59.8% and 40% respectively. However, in the last year, reduction has been rather limited, amounting to just 0.4% and 0.3%.

With trends characterised by different annual fluctuations, in the case of acidifying and eutrophying gases, all pollutants show a major reduction in their emissions except for NH_3. SO_2 emissions decreased by 88.2% (due, among other causes, to the reduction in the emissions of the sectors with the highest incidence such as “Combustion in the Production and Transformation of Energy" and "Industrial Combustion Plants"), whereas NO_x showed a decrease of 39.9% (undoubtedly due to the reduction in emissions from transportation as a consequence of new technologies for vehicles and fuels). NH_3 emissions have increased slightly by 2.9%.

Regarding eutrophying gases, only CH_4 emissions increased during the same period, whereas NO_x, NMVOCs and CO decreased. Specifically, the increase of methane amounted to 19.2%, whereas other gases experienced decreases of 39.9%, 39.4% and 44.5%, respectively. The increase of emissions in activities related to "Combustion in the Production and Transformation of Energy", "Industrial Combustion Plants" "Waste Treatment and Disposal" and "Agriculture" contributed to an increase in methane emissions. Emissions related to agricultural activities are not conditioned by the increase over the period (which was not significant), but by their major weight in total emissions.

In the last year, only SO_2 emissions (1.3%) and NO_x (1.7%) decreased. CH_4 emissions increased by 0.6%, NMVOCs by 1.2%, NH_3 by 2.9% and CO by 4.9%.

Acidifying and eutrophying gas emissions and tropospheric ozone precursors
Index 1990=100



Source: MAGRAMA

Emissions of three (SO_x, NMVOCs and NO_x) of the four pollutants included in the Emission Ceilings Directive are at the same level since 2010 under the values established, in compliance with the ceiling set for the period 2010 to 2014. NH_3, on the other hand, only met its ceiling in 2012, but not in 2010, 2011, 2013 and 2014.

Definition of the Indicator:

The indicator shows the emission indexes of the main gases responsible for the acidification and eutrophication of the environment (SO_2, NO_x and NH_3) and that of the precursors of tropospheric ozone (NO_x, NMVOCs, CO and CH_4), both in an aggregated and in an individual manner for each gas and referring to 1990 as the base year (1990=100).

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_2 (2/64 acid equivalents/gram), 21.74 acid equivalents/kg for NO_x, expressed as NO_2, (1/46 acid equivalents/g) and 58.82 acid equivalents/kg for NH_3 (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_x, 1.00 for NMVOCs, and 0.11 for CO and 0.014 for CH_4.
- Directive 2001/81/EC, on National Emission Ceilings, is being reviewed as part of the measures to clean Europe's air. The proposal guarantees that maximum national emission ceilings for SO_2, NO_x, NMVOCs and NH_3 of the current Directive for the year 2010 will be applicable until 2020 and establishes new "national reduction commitments" for emissions applicable from 2020 and 2030 for SO_2, NO_x, NMVOCs, NH_3, fine particles (PM 2.5) and methane (CH_4).

Source:

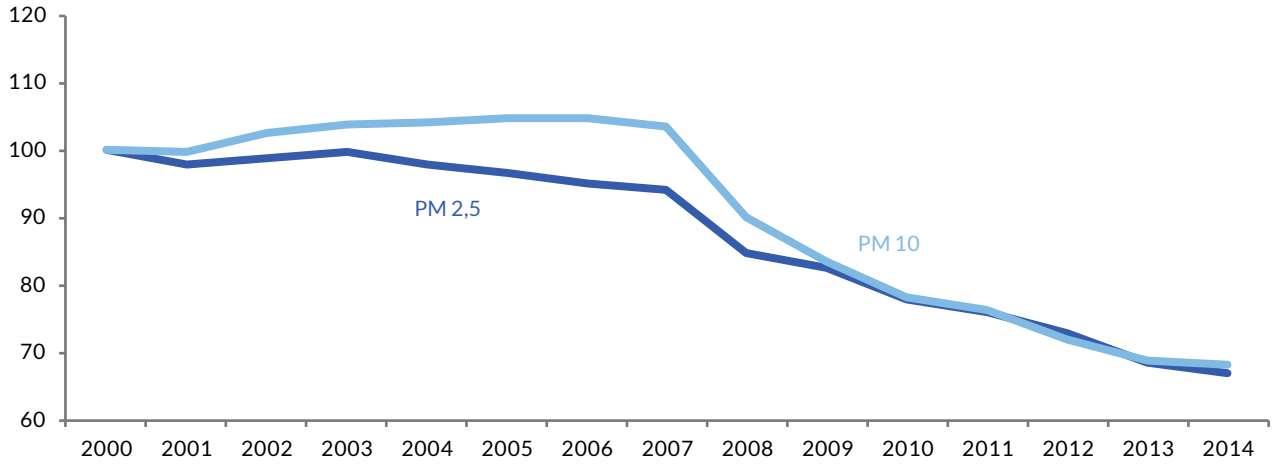
Ministry of Agriculture, Food and the Environment, 2016. National Inventory of Emissions 1990-2014. Directorate-General for Environmental Quality and Assessment and Natural Environment. Data provided by means of previous request, according to SNAP nomenclature.

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

Particulate matter emissions: PM2.5 and PM10 (2000=100)



Source: MAGRAMA

- ***Between 2000 and 2014, there was a decrease of 32.8% in PM2.5 emissions and of 31.8% in PM10 emissions***
- ***In 2013, Spain was responsible for 5% of total PM10 emissions in the EU-28, ranking 7th***

In 2014, the downward trend in the emission of particulates continued with a lower intensity with respect to previous years.

Between 2000 and 2014, there was a decrease of 32.8% in PM2.5 emissions and of 31.8% in PM10 emissions. Since 2009, the behaviour of PM10 and PM2.5 emissions remains very similar without the differences present in previous years.

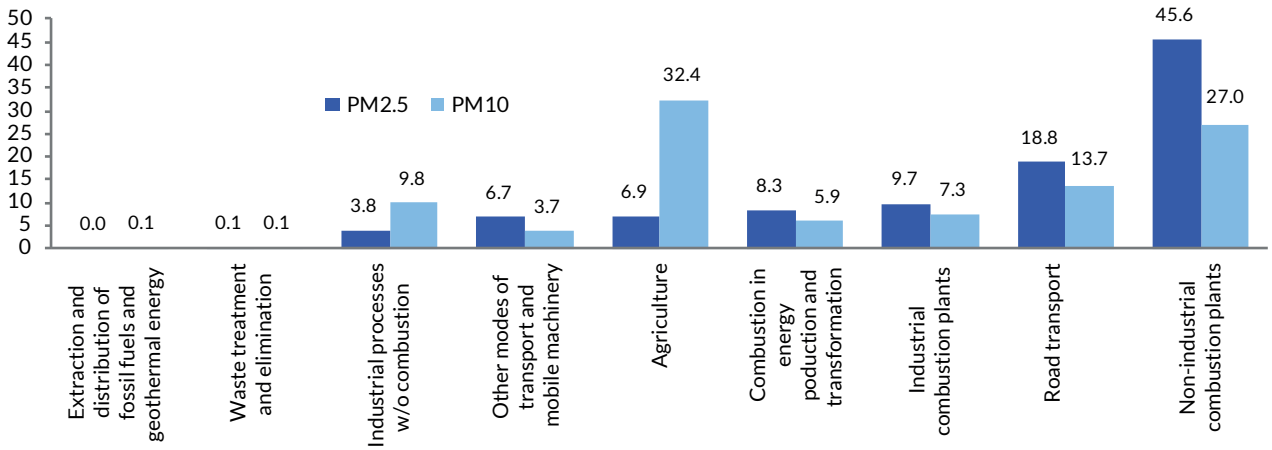
All sectors experienced reductions to different extents as regards the emission of particulates, except for "Industrial Processes without Combustion" and "Agriculture", in which emissions have increased. Therefore, between the years 2000 and 2014, emissions caused by industrial processes increased by 24% and those caused by agriculture by 7.7%. Regarding PM10, increase amounted to 22.8% and 10.8%, respectively. Among the most significant decreases due to its volume, we may highlight those experienced in the "Extraction and Distribution of Fossil Fuels and Geothermal Energy", "Combustion in Production and Transformation of Energy" and "Transportation (road and other forms)".

In 2014, the decrease in PM2.5 emissions amounted to 2.2%, whereas PM10 emissions amounted to 0.9%. In both cases, the percentages are lower than those from previous years.

In 2014, the distribution of particulate emissions shows that regarding PM2.5, the "non-industrial combustion plants" and "road transportation" were the sectors with the highest incidence. Regarding PM10, the sectors with the highest contributions were non-industrial combustion plants; however, in this case, such contribution is lower than in the case with agriculture.

Within the framework of UE-28 (excluding information on Greece), PM10 emissions those 2000 and 2013 fell by an average of 18.8%. In Spain, this decrease amounted to 32.6%, the country with the fourth highest reduction after Cyprus, France, Hungary and the Netherlands. In 2013, Spain contributed with 5% of total PM10 emissions in the EU-28, ranking seventh. Emissions of anthropic origin are generally decreasing in most member States: during such periods increases only occurred in four countries (Romania, Bulgaria, Latvia and Lithuania).

Distribution of particulate matter emissions by sector (%)
Year 2014



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 µm (PM10 and PM2.5). They are expressed as an index (2000=100).

Methodological Notes:

- The calculation of emissions does not include those from international air and sea traffic (international bunker).
- The EU has not established specific emission limits for primary particulates, although there are national ceilings for its precursors in 2010 (NO_x, SO_x and 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 (SO_2, NO_x, NH_3 and NMVOCs).

Source:

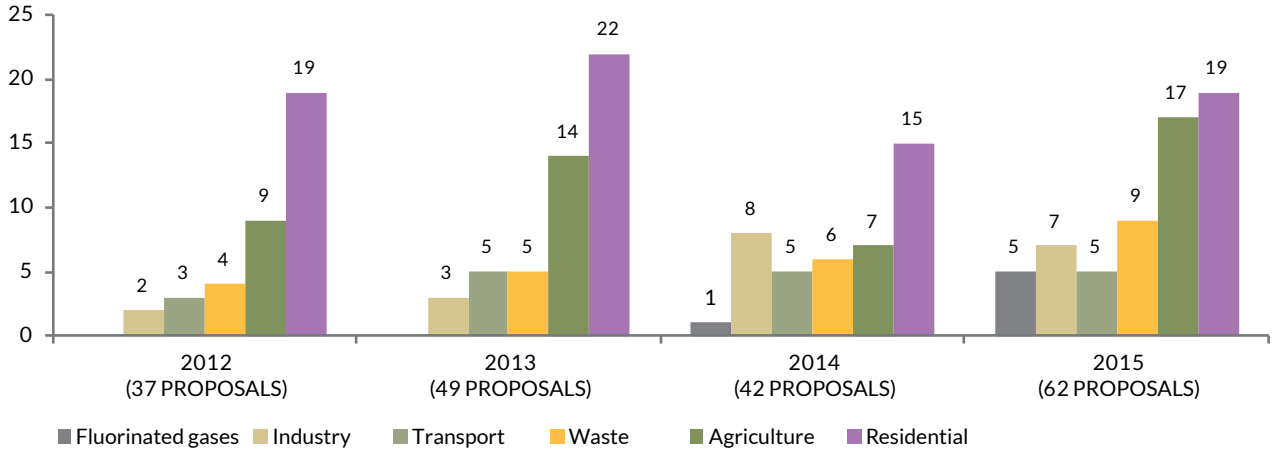
Ministry of Agriculture, Food and the Environment, 2016. National Inventory of Emissions 1990-2014. Directorate-General for Environmental Quality and Assessment and Natural Environment. Data provided by means of previous request, according to SNAP nomenclature.

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/indicators/emissions-of-primary-particles-and-5/assessment-3

Spanish Carbon Fund Climate Projects

Sectoral distribution of contracts for selected Climate Projects



Source: MAGRAMA

- ***2015, with 62 projects selected, was the year with the highest number of projects since the first call was launched in 2012***
- ***The residential and the agricultural sectors are those with the highest number of proposals selected in 2015 (19% and 17% respectively)***
- ***Clima Projects are aimed at preventing emissions in different sectors such as transportation, residential, waste, agriculture and livestock farming, industry (not included in the emissions trading scheme) and fluorinated gases***

The 2015 call for "Carbon Fund Climate Projects" saw more projects selected than any previous year, with a total of 62. Climate Projects are initiatives developed with the aim of reducing emissions in all diffuse sectors: transportation, residential, waste, agriculture and livestock farming, industry (unless involved in the emissions trading scheme) and fluorinated gases.

In 2015, contracts were distributed among 36 projects and 26 programmes. By type of sector, 30.6% of contracts correspond to the residential sector, 27.4% to agriculture, 14.5% to waste management, 11.3% to industry and 8.1% to transportation, while the fluorinated gas sector also represented 8.1% of the contracts executed.

Out of the 190 projects and programmes selected between 2012 and 2015, 39.5% correspond to the residential sector, whereas 24.7% correspond to agricultural activity. Waste management projects represent 12.6%, industrial projects 10.5% and transportation 9.5%. In 2014, the sector of fluorinated gases from diffuse sources was included in the call. That year, there was only one project selected for that sector, whereas in 2015 the number of selected projects increased to five.

In total, 190 projects for the reduction of emissions were approved in the four calls. These initiatives offer an added value beyond the mere reduction of emissions and their consequences as regards climate change, since they are a source of green jobs.

The budget allocation for 2016 amounts to 20 million euros, which will allow the Carbon Fund to acquire verified emission reductions for greenhouse gases being generated by selected projects.

Definition of the Indicator:

This indicator shows the number of contracts corresponding to the Spanish Carbon Fund Climate Projects selected each year and their distribution by sector. It shows data for the editions carried out so far, years 2012, 2013, 2014 and 2015.

Methodological Notes:

- The Spanish Carbon Fund Climate Projects for a Sustainable Economy (FES-CO_2) are projects carried out in Spain aimed at the reduction of the emission of Greenhouse Gases (GHG).
- Climate Projects must be located in Spain and implemented within the so-called "diffuse sectors" (not subject to the European emissions trading scheme), such as transport, agriculture, housing, waste, etc. This scheme does not include of projects for the absorption of emissions by sinks.
- Reductions in emissions through FES-CO_2 require compliance with a set of requirements, including 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, 2016. List of Selected Climate Projects. Call 2015. On the website:
Magrama / Climate Change / Climate Projects / Calls and Projects / 2015 Call / Project List and Climate Projects selected for 2015

Recommended Websites:

- http://www.magrama.gob.es/es/cambio-climatico/temas/proyectos-clima/
- http://www.magrama.gob.es/es/cambio-climatico/temas/proyectos-clima/proyectos-clima-seleccionados-2015_tcm7-411599.pdf

Carbon Footprint, Offsetting and Carbon Dioxide Removal Register

Number of registration applications by sections. (May 2014 to December 2015)

Register Sections	2014 and 2015	2014	2015
Carbon footprint and commitments for reduction	381	101	280
Carbon dioxide removal projects	10	5	5
Carbon footprint offsetting	6	1	5
Total registration applications	**397**	**107**	**290**

Source: MAGRAMA

- ***Between May 2014 and 31 December 2015, 397 applications for registration in the Carbon Footprint Register, compensation and absorption projects of carbon dioxide were submitted***
- ***Out of all of them, only 2.8% were rejected, whereas 83.1% were registered 14.1% were pending analysis at the end of the year***

The carbon footprint, offsetting and CO_2 removal register was implemented in 2014. Its purpose is to quantify greenhouse gases arising from a specific activity or service.

During 2015 and the last eight months of 2014 with the registry fully operational, there was a clear consolidation of the section devoted to carbon footprints and their corresponding reduction plans, with a total number of 381 registration applications. On the other hand, only 10 CO_2 removal projects were registered and just six registrations were made in the carbon footprint offsetting section, mainly at the end of 2015.

2015 saw the consolidation of the register following its launch in 2014. 73% of all registrations were made during 2015, while the other 27% correspond to those made during the eight months of 2014. By sections, only "CO_2 removal projects" had the same number of registrations in both years, distributed at 50%. The distribution of registrations in "Carbon footprint and commitments for reduction" amounted to 26.5% in 2014 and 73.5% in 2015, a very similar proportion to that of the total. However, there was a lower demand for registrations in the "Carbon footprint offsetting" section: one in 2014 and five in 2015, representing 16.7% and 83.3%, respectively.

Regarding the status of the registrations, it may be pointed out that out of 397 applications, 83.1% were registered, 14.1% were pending analysis and 2.8% were rejected.

Status of registration applications by sections. (May 2014 to December 2015)

Register Sections	2014 and 2015	Registered	Rejected	Under Analysis
Carbon footprint and commitments for reduction	381	319	10	52
Carbon dioxide removal projects	10	6	0	4
Carbon footprint offsetting	6	5	1	0
	397	**330**	**11**	**56**

Source: MAGRAMA

The report "Carbon footprint, offsetting and carbon dioxide removal register. Annual report 2015" by the MAGRAMA includes the final data of the register for the year 2014 and the situation for 2015. We recommend consulting this report, which analyses in detail the evolution of the registrations and is organised into the following three sections, for further information.

- Carbon footprint and GHG reduction commitments
- Carbon dioxide removal projects
- Carbon footprint offsetting

Definition of the Indicator:

The indicator shows the number of carbon footprints and removal and offsetting projects registered annually in the Carbon footprint, offsetting and carbon dioxide removal register. Both the total number of entries is included as well as the number of entries of carbon footprints by activity sector.

Methodological Notes:

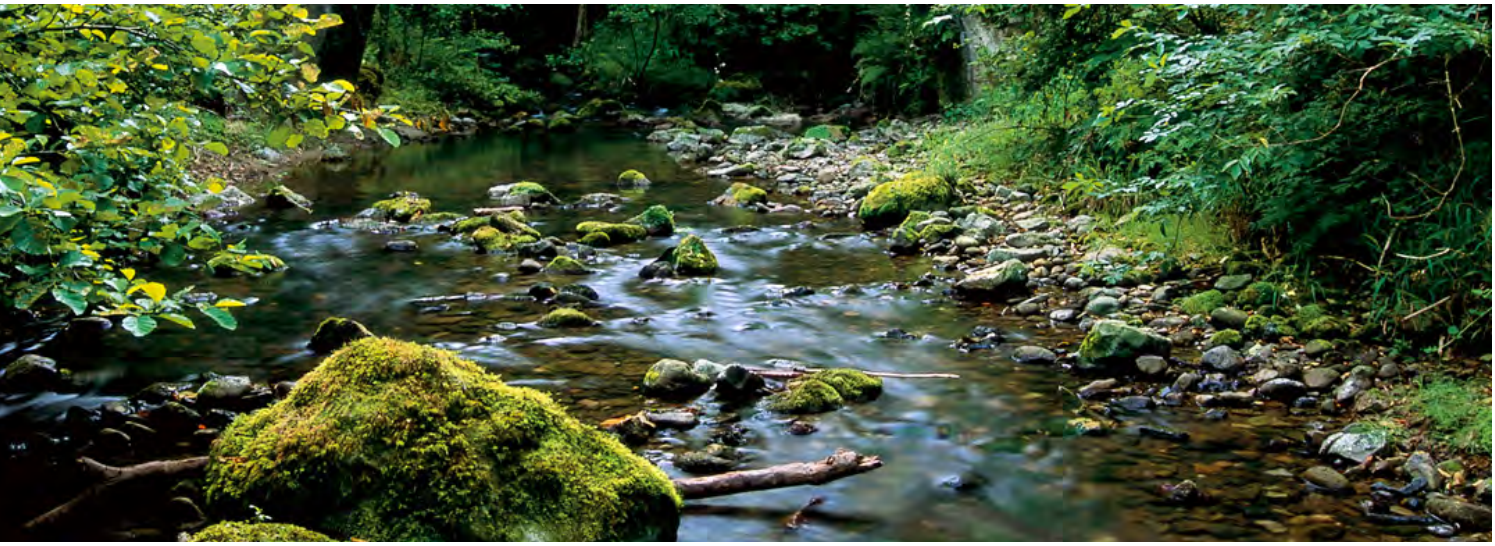
- On 29 May 2014, Royal Decree 163/2014, of 14 March, for the creation of the Carbon footprint, offsetting and carbon dioxide removal register entered into force. The optional register is aimed at promoting the calculation and reduction of the carbon footprint of Spanish organisations, as well as encouraging 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 voluntarily calculate their carbon footprint and establish a reduction plan.
  - Section for carbon dioxide removal projects: for agroforestry sink projects which allow for the offsetting of the carbon footprint of those organizations registered with the previous section.
  - Section for carbon footprint offsetting in which offsetting is registered so that it can receive institutional support.
- Royal Decree 163/2014, for the creation of the Carbon footprint, offsetting and carbon dioxide removal register establishes in Article 4.3 that the Spanish Office of Climate Change will publish annually a summary report on the status 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, 2016. Report "Carbon footprint, offsetting and carbon dioxide removal register. Annual Report 2015."

Recommended Websites:

- http://www.magrama.gob.es/es/cambio-climatico/temas/mitigacion-politicas-y-medidas/Portal-Huella-Carbono.aspx
- https://www.boe.es/diario_boe/txt.php?id=BOE-A-2014-3379



2.4 WATER

In Spain, water is a scarce resource that is distributed irregularly over time, which can give rise to periods of drought. Added to this, there is also the fact that periods of intense precipitation can also occur, causing cases of overflow and flooding. It is clear that hydrological planning is a fundamental instrument needed to manage our resources and their differing demands.

It is no surprise that hydrological planning and its organisation in river basin districts has a long history in Spain and has served as a point of reference for the European Union's Water Framework Directive (WFD). The WFD constitutes an advance in hydrological planning that, moreover, offers us a comprehensive ecosystem-based approach in which water goes from being a mere resource with diverse social and economic uses to being the fundamental basis for the existence, development and evolution of many associated ecosystems.

The Spanish system combines demand management measures with supply management, focussing on efficient and sustainable use of the resource to guarantee supply for all its uses throughout the country and in a way that respects the environment.

On 8 January 2016, the Government Cabinet gave the green light to the Royal Decree approving the review of the Hydrological Plans for the 12 inter-regional river

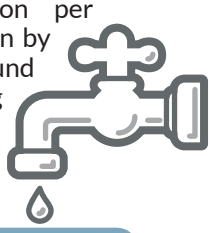
basin districts (including the Eastern Cantabrian, which includes the internal basins of the Basque Country, which come under regional control), along with the Royal Decree for the approval of 4 inter-regional river basin districts (3 under Andalusian control and the Galician Coastal basin). These Plans, together with the Balearic Islands River Basin District, also under the control of the regional government, was approved by Royal Decree in July 2015.

During the months of September and October 2015, an initial agreement of the Council of Ministers was presented for public consultation, with a favourable outcome, public consultation was presented reporting favourably on a first agreement by the Council of Ministers, which declared 135 Natural Fluvial Reserves, of which, as of 20 November 2015, 82 have been declared Natural Fluvial Reserves which are in excellent ecological condition. The National Hydrological Reserve Catalogue was also created. Once these Reserves have been identified and declared, a Pilot Management Plan will be prepared for a selected Reserve that allows it to be converted into a reference point, both in scientific, as well as social and culture terms.

In terms of the protection of people and property from floods, the majority of the flood risk management plans (15 river basin districts) were approved by the Government at the Council of Ministers meeting of 15 January 2016, and published in Official State Gazette No. 19 of 22 January 2016. Subsequently, at the Council of Ministers meeting of 15 April 2016, the flood risk management plan for the Balearic Islands River Basin District was approved, published in Official State Gazette No. 92 of 16 April 2016, with only the flood risk management plans for the Interior Basins of Catalonia in the final processing stages, and that of the Canary Islands, planned for approval in 2016, remaining pending.

Water Consumption

- Registered water consumption through the public supply networks between 2004 and 2013 fell by 20.6%, particularly in the case of consumption in homes (28.3%), while the economic sectors and municipal and other users also reduced usage by 17.9% and 19.8% respectively.
- Average water consumption per person in the home has fallen by 21.7% since 2005, to around 130 litres per person during 2013.



Nitrate Pollution of Groundwater

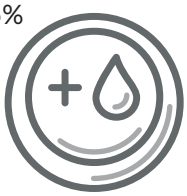
- In 2015, seven of the 17 river basin districts evaluated showed nitrate concentrations below 50 mg/l in less than 15% of their stations and only four river basin authorities had over 30% of their stations with nitrate concentration levels above 50 mg/l.
- In 2015 river basin districts in the north and north-east of the peninsula, as in previous years, showed no stations with nitrate concentrations in excess of 50 mg/l.

Status of Water Bodies

- In 2015, 54.4% of natural surface water bodies had an ecological status of very good or good, 44.7% of artificial or heavily modified surface water bodies had good or maximal ecological potential and 83.3% of all surface water bodies had a good chemical status.
- Groundwater bodies stood out for their good quantitative status in 68.3% of cases and a good chemical status in 60.3% of cases.

Reservoir Water Levels

- At the end of hydrological year 2014/2015, total peninsular water reserves represented 55% of reservoir capacity, a percentage greater than the average for the last 10 years but less than the average for the last 5 years.

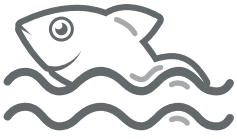


Organic Pollution of Rivers

- An increase was recorded in the percentage of sampling points with concentration below the Biochemical Oxygen Demand (BOD5), exceeding 85% for 2015.
- Since 2010, the percentage of sampling points with high concentrations of ammonium has been below 8%. 2015 was the first year in which the percentage of sampling points with high concentration dropped below 5%.

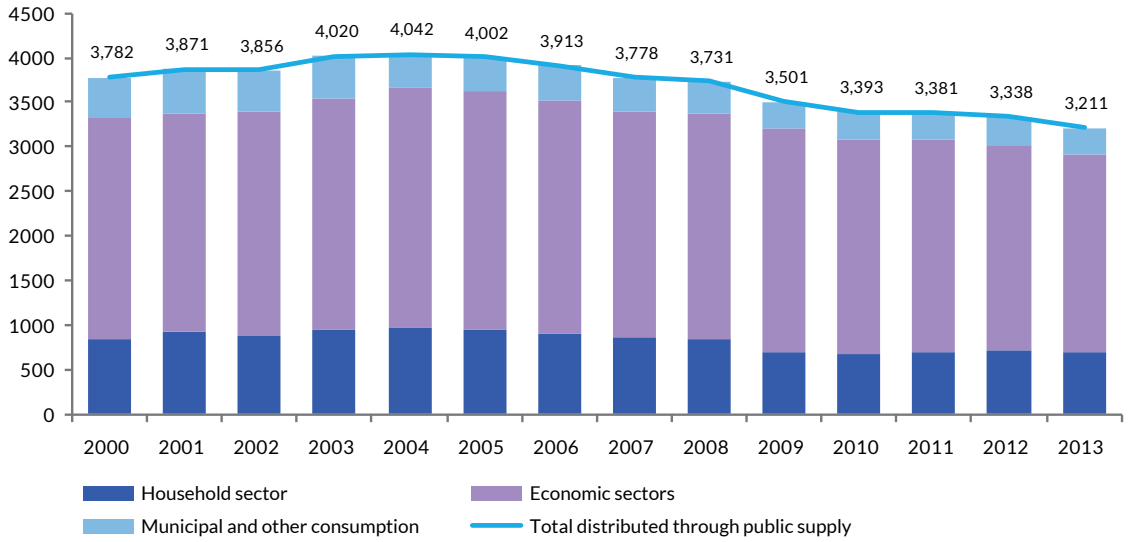
Quality of Inland Bathing Water

- The 2015 bathing season, at just 86 days, was the second shortest for inland waters since 2006, with 2014 being the shortest.
- 2015 saw a reduction in the percentage of sampling points in the excellent and good categories for continental bathing waters: the percentage of sampling points with excellent quality was 52%, down from 56% in 2014.



Water Consumption

Distribution of registered water through the public supply network by group of users (hm³)



Source: INE

- ***Registered water consumption through the public supply networks between 2004 and 2013 fell by 20.6%, particularly in the case of consumption in homes (28.3%), while the economic sectors and municipal and other users also reduced usage by 17.9% and 19.8% respectively***
- ***Average water consumption per person in the home has fallen by 21.7% since 2005, to around 130 litres per person during 2013***

During 2013, urban public supply networks were supplied with 4,324 cubic hectometres (hm³) of water, of which 3,211 hm³ were measured and registered through domestic water meters (almost 75% of the total supplied). Of this, the volume of water registered and distributed to households was 2,218 hm³ in absolute terms, accounting for 69.1% of the total volume. Economic sectors used 695 hm³ (21.6%), while municipal consumption (irrigation of gardens, street cleaning and other uses) reached 298 hm³ (9.3%).

The remaining 1,113 hm³ is included under "volume of unregistered water" (estimated using gauging or not measured), separated into real and apparent losses. Real losses (leaks, breaks and breakdowns in the supply network) were estimated at 678 hm³, some 15.7% of the total water supplied to these networks. For their part, the apparent losses (measurement errors, fraud and estimated consumption) amounted to 435 hm³.

These figures do not include the volume of irrigation water used on agricultural holdings, which was 14,534 hm³ in 2013, down 8.2% from the previous year.

The total number of water management agencies or companies from which data have been obtained for the reference year 2013 was 427. The framework of the survey was built by the Central Companies Directory (DIRCE, as per the Spanish acronym), compiled by the National Statistics Institute (INE, as per the Spanish

acronym) and the Local Companies Directory, prepared by the General Secretariat of the Coordination of Autonomous and Local Competencies, of the Ministry of Finance and Public Administrations. Said framework is extended to those local authorities that directly manage water related services.

Since 2004, a decrease in registered water consumption has been recorded, reaching 20.6% in 2013. This reduction occurred mostly in households mostly (28.3%), while the reductions in use by sectors of the economy and municipal consumption were less significant: 17.9% and 19.8% respectively.

Average domestic consumption per person (calculated using the quotient between the total volume of water registered and distributed to homes and the resident population) for 2013 was 130 litres per inhabitant per day, with a 3.7% decrease from the 135 litres registered the year before and some 21.7% less than 2005, the year in which water consumption per inhabitant began to decrease, motivated mainly by the water conservation awareness campaigns.

The highest average water consumption was recorded in C. Valenciana (158 litres per inhabitant per day), Castilla y León (157 litres) and Cantabria (144 litres). Conversely, the lowest levels of average consumption were recorded in homes in Navarre and La Rioja (112 litres per inhabitant per day) and Catalonia (117 litres).

Average water consumption per inhabitant per day

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Litres/inhabitant	168	165	164	167	171	166	160	157	154	149	144	142	135	130
% 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	-3.7

Source: INE

66.4% of the volume collected by companies and public water agencies came from surface waters, while 30.1% came from underground waters. The remaining 3.5% originated from other types of waters (desalinated sea or brackish waters).

In 2013 water cost per unit was 1.83 euros per m^3, an increase of 5.8% compared to the previous year (1.73 euros). The unit cost of the water supply was 1.09 euros per cubic metre, 5.8% more than in 2012, while sanitation costs (sewerage, purification, treatment and discharge) was 0.74 euros, an increase of 5.7%.

Definition of the Indicator:

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

Source:

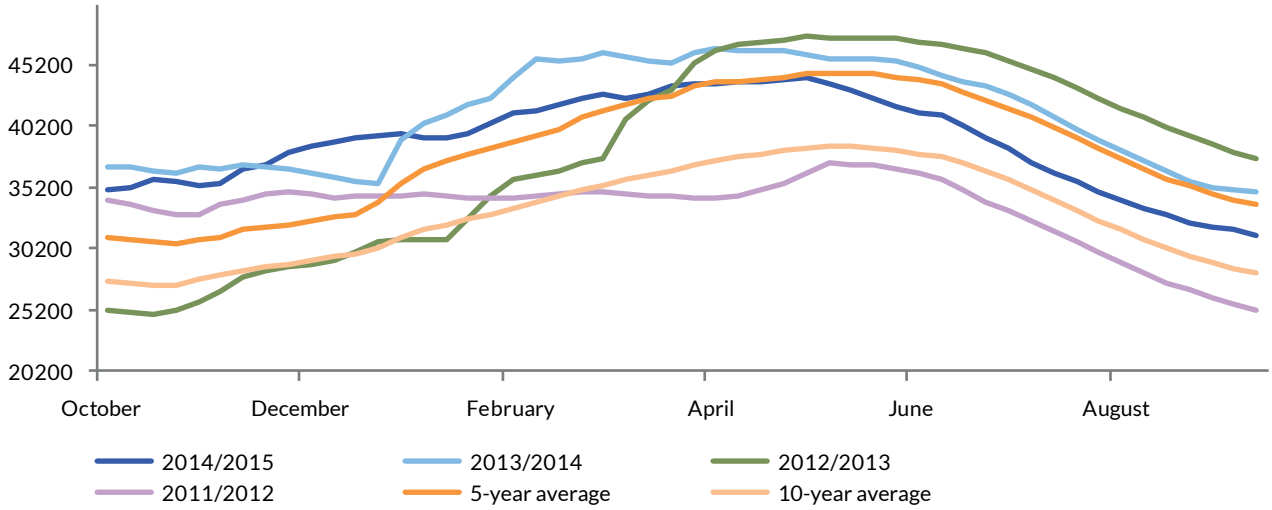
National Institute of Statistics (INE): Water supply and sanitation statistics (various years). Information on the website: INEbase / Agriculture and Environment / Water / Water supply and sanitation statistics / Results / Water indicators / Series 2000-2013 / 2.1 Indicators for water supply by community and Autonomous Community.

Recommended Websites:

- http://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica_P&cid=1254735976602

Reservoir Water Levels

Peninsular hydrological reserves: Volume of reservoir water (hm^3) by hydrological years (from 1 October to 30 September of the following year)



Source: MAGRAMA

- ***At the end of hydrological year 2014/2015, total peninsular water reserves represented 55% of reservoir capacity, a percentage greater than the average for the last 10 years but less than the average for the last 5 years***

In terms of the peninsula, Spain had, as of 6 October 2015, a total reservoir capacity of 55,977 hm^3, with 75.3% on the Atlantic watershed and the remaining 24.7% in the Mediterranean watershed.

At the end of hydrological year 2014-2015, total peninsular water reserves represented 55.1% of reservoir capacity, a percentage greater than the average for the last 10 years, which was 51.1%, but less than that for the last 5 years, which was 60.4%. In comparison with the previous hydrological year, water reserves show more stable growth, due to precipitation patterns without any sudden increases, unlike over the last two years: in 2014-2015 there were no periods of intense precipitation, resulting in a lower percentage of reserve at the high point of the year, between April and June.

Capacity (hm^3) and reserves (%) of peninsular reservoirs. (Data as of 6 October 2015)

WATERSHEDS	Total reservoir capacity (hm^3)	Reserves (hm^3)	Reserves compared to total capacity (%)				
			2015	2014	2013	5-year Average	10-year Average
Atlantic Watershed	42,134	23,669	56.2	64.3	67.6	62.7	53.3
Mediterranean Watershed	13,843	7,189	51.9	57.7	63.8	53.3	44.4
Total (Entire Peninsula)	**55,977**	**30,858**	**55.1**	**62.7**	**66.6**	**60.4**	**51.1**

Source: MAGRAMA

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 the Snowmelt (EHRIN , as per the Spanish acronym) programme. The aim of this programme 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, as well as in extreme circumstances of flood and drought. Moreover, the programme allows for monitoring and analysis of Spanish glaciers to be performed.

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.

Furthermore, 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 and Technological Disasters" included in this publication.

Definition of the Indicator:

Water reserves in peninsular reservoirs. Offers global 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^3, 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://www.magrama.gob.es/es/agua/temas/evaluacion-de-los-recursos-hidricos/boletin-hidrologico/default.aspx
- 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/

Nitrate Pollution of Groundwater

Nitrate pollution of groundwater

Percentage of stations with nitrate concentration over 50 mg/l

River Basin Districts	2012	2013	2014	2015
Miño-Sil	0.0%	0.0%	0.0%	0.0%
Galicia-Coast	3.1%	0.0%	1.5%	0.0%
Eastern Cantabrian Sea	0.0%	0.0%	0.0%	0.0%
Western Cantabrian Sea	0.0%	0.0%	0.0%	0.0%
Duero	16.2%	15.8%	13.2%	14.6%
Tajo	16.9%	33.3%	10.6%	11.4%
Guadiana	31.6%	38.1%	30.8%	27.0%
Guadalquivir			26.7%	25.9%
Mediterranean Basins of Andalusia	8.7%	13.3%	12.8%	12.6%
Guadalete and Barbate	26.6%	31.1%	29.8%	26.5%
Tinto, Odiel and Piedras	19.1%	34.2%	38.9%	40.0%
Segura	21.7%	23.2%	18.8%	23.2%
Júcar	23.0%	44.2%	35.7%	36.1%
Ebro	19.4%	21.8%	23.2%	27.0%
Inland Basins of Catalonia	43.6%	33.6%	38.7%	33.5%
Balearic Islands	29.4%	30.1%	28.1%	29.6%
Melilla			100.0%	66.7%

Source: MAGRAMA

- ***In 2015, seven of the 17 river basin districts evaluated showed nitrate concentrations below 50 mg/l in less than 15% of their stations and only four river basin districts had over 30% of their stations with nitrate concentration levels above 50 mg/l.***
- ***In 2015, river basin districts in the north and north-east of the peninsula, as in previous years, showed no stations with nitrate concentrations in excess of 50 mg/l.***

Directive 91/676/EEC concerning the Protection of Waters against Pollution caused by Nitrates from Agricultural Sources (Nitrates Directive) requires, among other things, the control of nitrate concentrations in water and the designation of vulnerable areas.

The Network for the Monitoring and Control of Chemical Status is adapted to the requirements of the Water Framework Directive, both in terms of the number of sampling points (around 4,500) and in terms of the number of variables measured at each point. These are adapted to control programmes: surveillance control and operational control.

The table shows the percentage of sampling points with nitrate concentrations above 50 mg/l estimated in each of the river basin authorities. The differences in these percentages between the four years shown can be

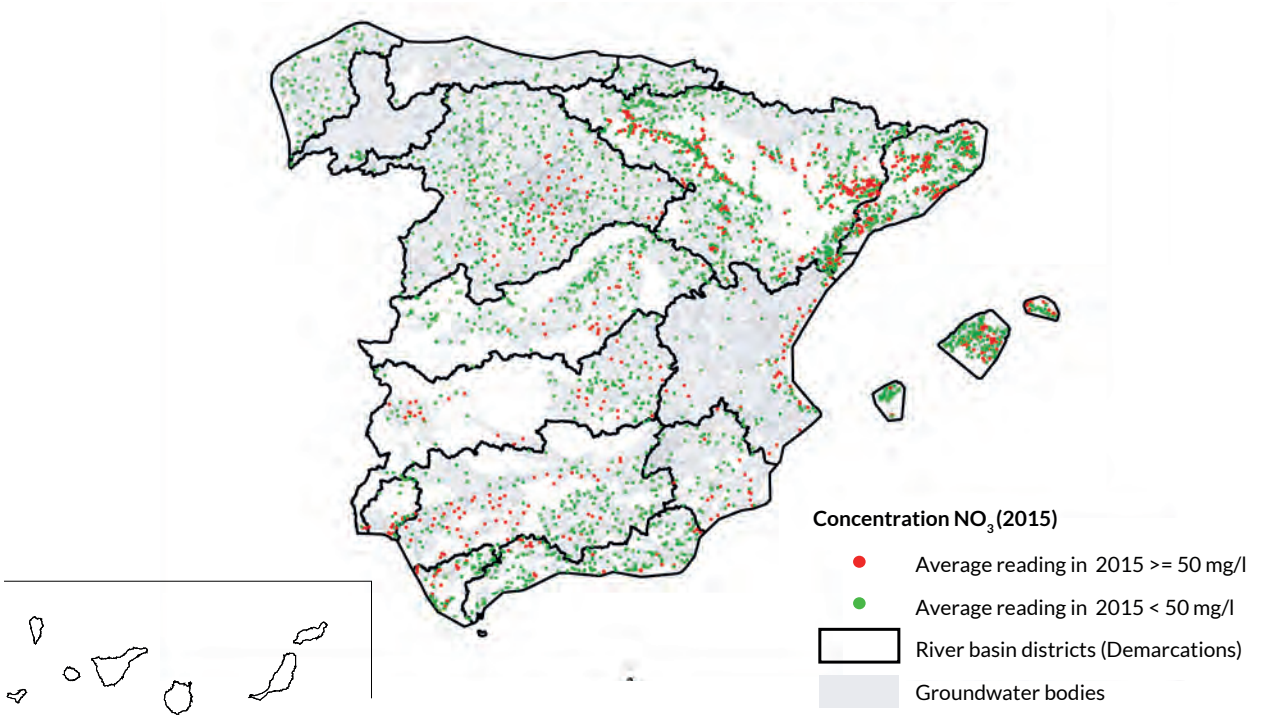
considered an indicator that describes a trend , influenced in each case by the number of stations that form part of the network in each district.

Of the 17 river basin districts with data in 2015, seven show less than 15% of their stations with nitrate concentrations below 50 mg/l, six of these had between 15% and 30% of their stations with more than 50 mg/l of nitrates and only four districts had more than 30% of their stations with nitrate concentration values in excess of this 50 mg/l threshold.

In 2014, there were also seven districts with less than 15% of their stations with concentrations in excess of the concentration, while five of them exceeded the threshold at 15 to 30% of their sampling points and another five exceeded it at over 30% of their sampling points.

In 2015, river basin districts in the north and north-east of the peninsula, as in previous years, showed no stations with nitrate concentrations in excess of 50 mg/l. The number of stations with this concentration level increased in some Mediterranean river basin districts, above all Segura (4.4 percentage points) and the Ebro (3.8 percentage points).

Groundwater control stations that measured nitrates in 2015



Source: MAGRAMA

Definition of the Indicator:

The table shows the percentage of sampling points with nitrate concentrations above 50 mg/l estimated in each of the river basin authorities for years 2012 to 2015, both inclusive.

Methodological Notes:

- Directive 2000/60/EC, which establishes the European framework for action in the field of water policy (Water Framework Directive) includes, among its objectives, the need to prevent groundwater pollution. To comply with these objectives, programmes must be established that include the measures required by Directive 91/676/EEC concerning the protection of water against pollution caused by nitrates from agricultural sources (Nitrates Directive).
- Directive 91/676/EEC establishes the following obligations for Member States:
  - To identify waters affected by pollution caused by nitrates from agricultural sources or which may be affected by it.
  - To designate vulnerable zones (surfaces where run off drains towards affected waters or which may be affected by intake of NO_3).
  - To prepare codes of agricultural best practice to progressively reduce nitrate pollution.
  - To establish action programmes and prepare and execute control programmes to evaluate the efficiency of the action programmes established and designate, modify or extend the list of vulnerable zones.
  - Periodically review vulnerable zones, at least once every four years.
  - Prepare a report on the situation every four years.
- This European Regulation sets out the criteria and procedures for the assessment of the chemical status of groundwater, as well as any potential measures to be adopted in order to reduce pollutants affecting them. In particular, in order to assess the chemical status thereof, certain rules on quality are set out for nitrates, where a maximum admissible concentration of 50 mg/l is established.

Source:

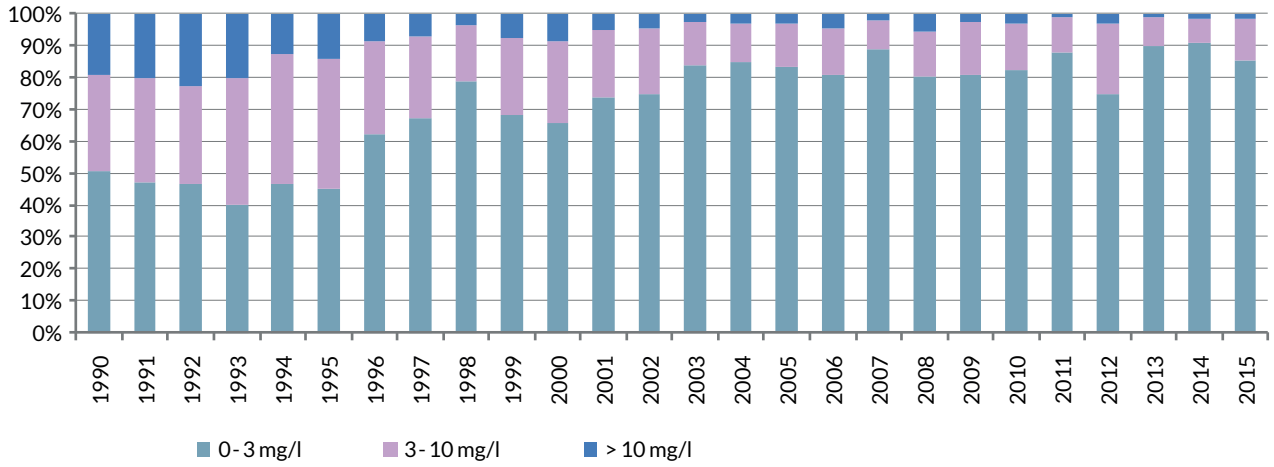
Data provided by the Sub-directorate General of Comprehensive Management of the Hydraulic Public Domain. Directorate General for Water. Ministry of Agriculture, Food and the Environment.

Recommended Websites:

- http://www.magrama.gob.es/es/agua/temas/estado-y-calidad-de-las-aguas/aguas-subterraneas/
- http://sig.magrama.es/recursossub

Organic Pollution of Rivers

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



Note: 2010-2015 data referring to hydrological year and 2015 data does not include the district "Galicia Coast"

- *An increase was recorded in the percentage of sampling points with concentration below the Biochemical Oxygen Demand (BOD5), exceeding 85% for 2015*
- *Since 2010, the percentage of sampling points with high concentrations of ammonium has been below 8%. 2015 was the first year in which the percentage of sampling points with high concentration dropped below 5%*

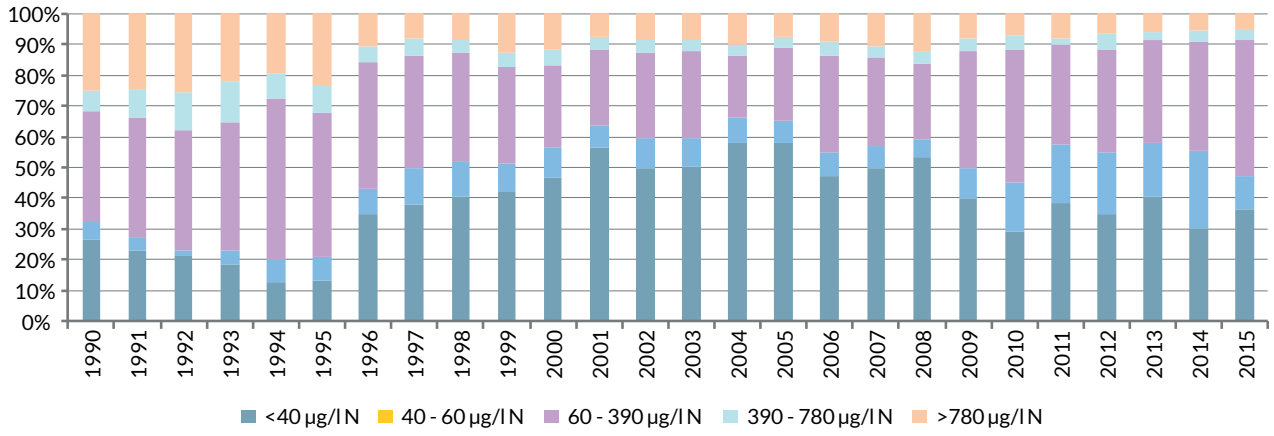
Although it varies year to year, the trend in Biochemical Oxygen Demand shows an increase over time of the percentage of sampling points with lower concentration and a reduction in those with higher concentration.

As can be seen in the graphic, the improvement is more evident since the year 2003. And, for example, since 2013, the Percentage of stations with average values of BOD5 in excess of 10 mg/l is below 2%.

Another important aspect is the existence of a sampling network with a variable number of stations each year, but that is generally on the increase, leading to average values that are more representative of the reality. Therefore, while in 1990, values were recorded at 382 stations, in 2015 the number of stations used was 2,413.

The trend in the concentration levels of ammonium is more irregular. We can see an initial period (1990-1995) with low values in the percentage of sampling points with low concentration; another intermediate period (1996-2009), in which the sampling points with low concentration of ammonium increased, and a third period (2010-2015) with higher concentration levels, though without reaching the initial levels. In recent years, moreover, the sampling points with high concentrations have stayed below 8% with 2015 being the first year they dropped below 5%.

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



Note: 2010-2015 data referring to hydrological year and 2015 data do not cover the districts "Guadalquivir", "Ebro", "Galicia Coast" or "Tajo"

Definition of the Indicator:

The indicator reveals the percentage of control stations with an average value of BOD5 between the following intervals: 0 to 3 mgO_2/l, 3 to 10 mgO_2/l and greater than 10 mgO_2/l. 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 BOD5 above 10 mgO_2/l are typical of very polluted waters, whereas values below 3 mgO_2/l indicate very low levels of 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 (NH4+) is the ionised form of ammonia (NH3). 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 in water, making it responsible for the increase in eutrophication. Its origin is mainly the sanitation and purification networks.
- In both cases (BOD5 and ammonium), since the year 2010 the sampling campaign refers to the hydrological year (from 1 October to 30 September).
- For the year 2015, in calculating the average value of BOD5, the data does not include the district "Galicia Coast" and in the case of ammonium the data does not include the districts "Guadalquivir", "Ebro", "Galicia Coast" or "Tajo."

Source:

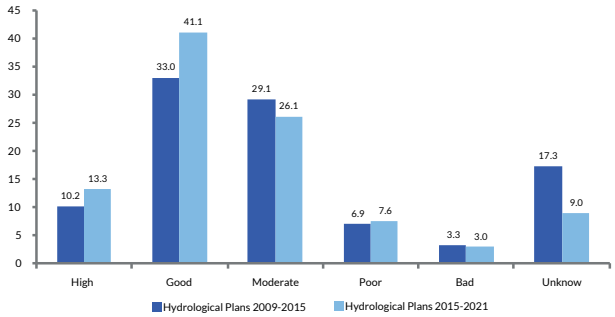
Data provided by the Sub-directorate General of Comprehensive Management of the Hydraulic Public Domain. Directorate General for Water. Ministry of Agriculture, Food and the Environment.

Recommended Websites:

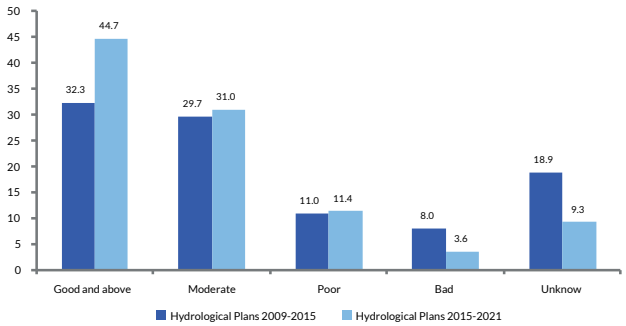
- http://www.magrama.gob.es/es/agua/temas/estado-y-calidad-de-las-aguas

Status of Water Bodies

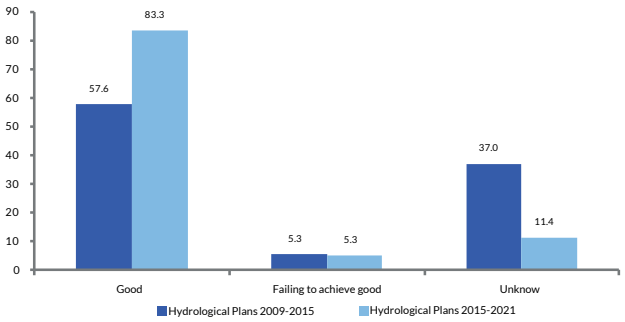
Percentage of surface water bodies according to ecological status



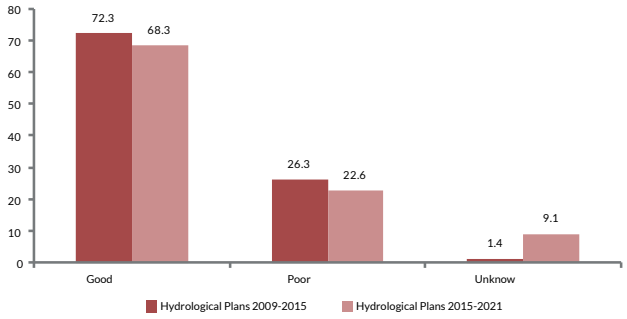
Percentage of surface water bodies according to ecological potential



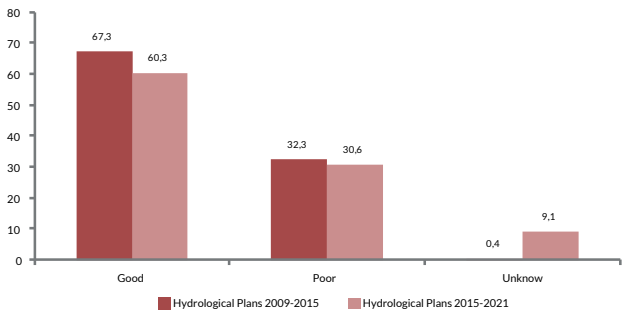
Percentage of surface water bodies according to chemical status



Percentage of groundwater bodies according to quantitative status



Percentage of groundwater bodies according to chemical status



Source: MAGRAMA

- *In 2015, 54.4% of natural surface water bodies had an ecological status of very good or good, 44.7% of artificial or heavily modified surface water bodies had good or maximal ecological potential and 83.3% of all surface water bodies had a good chemical status*
- *Groundwater bodies stood out for their good quantitative status in 68.3% of cases and a good chemical status in 60.3% of cases*

The Recast Text of the Water Law establishes the concepts and methodology for establishing the status of required bodies of water in accordance with the Water Framework Directive (Directive 2000/60/CE). The general environmental objective is for all water bodies in Europe to reach good status in 2015.

In this framework the status of bodies of water (surface and groundwater) must be evaluated annually in each of the Hydrological Plans in the Districts, to be updated every six years.

This evaluation must be carried out attending to a series of indicators which determine, for surface water bodies (rivers, lakes, transitional and coastal waters), their ecological status or their ecological potential (this latter only in the case of artificial or heavily modified waters) and their chemical status; and, for groundwater bodies, their chemical and quantitative status.

The river basin hydrological plans 2015-2021 reflect the following situation in Spanish territory.

Surface Water Bodies

- The ecological status of surface water bodies shows that 54.4% are good or very good, with 13.3% considered very good. The percentage of surface water bodies that do not reach the required environmental objectives represent 36.7%, while the status of the remaining 9% is unknown.
- On the ecological potential (referring to artificial or heavily modified surface water bodies, a group that includes reservoirs, for example) 44.7% of water bodies reach good and maximum ecological potential, while 46% are below the requirement. Almost equal to the previous case, 9.3% of these artificial or heavily modified surface waters are of unknown status.
- In relation to chemical status, 11.4% of surface water bodies are classified as unknown status, while 83.3% showed good status and only the remaining 5.3% did not reach this status.

Groundwater bodies

- The quantitative status of groundwater bodies is classified as good in 68.3% of cases and poor in 22.6% of cases.
- In relation to chemical status, 60.3% of groundwater bodies are classified as having good status and 30.6% as poor.
- In both cases (quantitative and chemical statuses) the percentage of bodies of water with unknown status was 9.1% in each case.

Definition of the Indicator:

Status of surface and groundwater bodies. In the case of surface bodies, evaluation is based on the percentage of its ecological status (for natural water bodies) or ecological potential (for heavily modified and artificial bodies) combined with chemical status. In the case of groundwater bodies, evaluation is based on quantitative and chemical status, as established in the current regulation.

Methodological Notes:

- Law 62/2003 on Tax, Administrative and Social Measures, amending Royal Decree 1/2001, of 20 July, approving the recast text of the Water Law and transposing the Water Framework Directive 2000/60/CE (DMA). This Directive establishes the framework of action for the protection, improvement and conservation of the water resources and their relation with the ecosystems promoting integrated management. One of the main objectives of the Directive is to achieve good status for EU waters (surface and groundwater) by 2015.
- The status of surface water bodies is calculated by taking the worst of the two partial diagnoses performed: on the one hand the ecological status (for natural water bodies) or ecological potential (for artificial or heavily modified water bodies) and, on the other hand, the chemical status. Similarly, the status of groundwater bodies is taken from the worst of the diagnoses of chemical status and quantitative status of water bodies. Thus, good status for surface water bodies is defined as reaching at least good status for ecological status/potential and chemical status, and in the case of groundwater, reaching good status for both chemical and quantitative status.
- The Hydrological Plans' Programmes of Measures allow these fixed targets for the status of water bodies to be reached. In accordance with European regulation, the worst value for each of the indicators is that which determines the body of surface water or groundwater, which can give rise on occasion to the situation whereby the investment made to improve some of the indicators is masked by the failure to achieve this improvement in all of them. This principle, known as "if one fails, all fail", is currently under review within the European Union for the purpose of offering alternatives to how water related progress is reported.
- The status of a surface water body is determined by the worst value measured of its ecological status or ecological potential and its chemical status, in such a way that if one of the two is poor, the "general status" must also be so. The status of a groundwater body is evaluated similarly: determined by the worst value measured for quantitative status and chemical status.

Source:

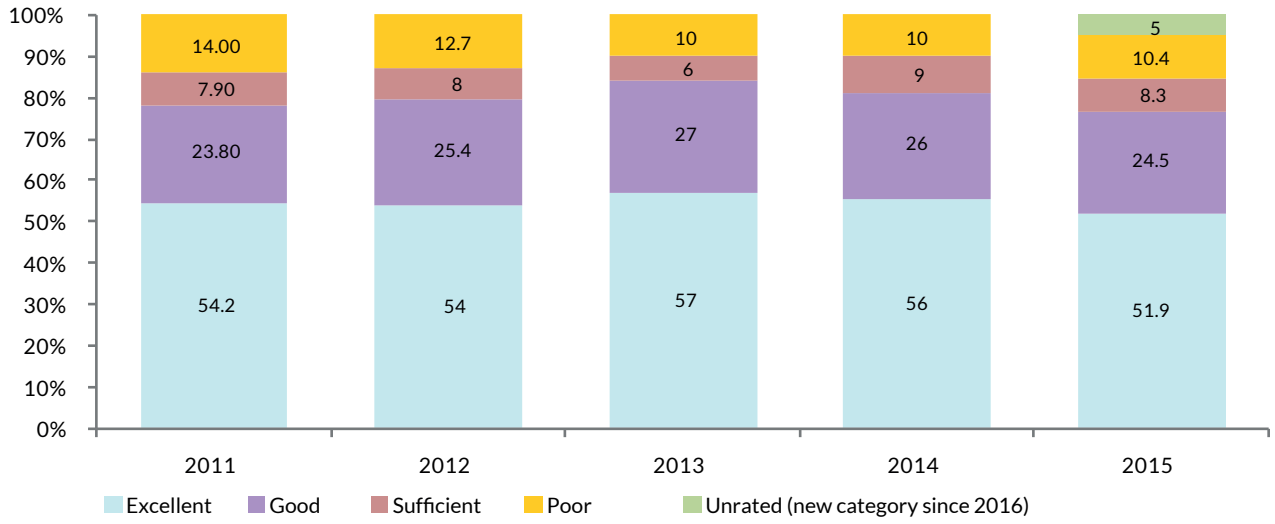
Data provided by the General Directorate for Water of the Ministry of Agriculture, Food and the Environment. Official data collected in the river basin management plans 2015-2021. This information is based on the data used to calculate the indicators for the year 2015 from the Hydraulic Public Domain.

Recommended Websites:

- http://www.magrama.gob.es/ide/metadatos/
- http://ec.europa.eu/environment/water/water-framework/impl_reports.htm
- http://ec.europa.eu/environment/water/water-framework/pdf/4th_report/MS%20annex%20-%20Spain_es.pdf

Quality of Inland Bathing Water

Quality of Inland Bathing Water
Percentage of sample points according to category



Source: MSSSI

- *The 2015 bathing season, at just 86 days, was the second shortest for inland waters since 2006, with 2014 being the shortest*
- *2015 saw a reduction in the percentage of sampling points in the excellent and good categories for inland bathing waters: the percentage of sampling points with excellent quality at 52%, down from 56% in 2014*

The Ministry of Health, Social Services and Equality coordinates the National Bathing Water Information System (NAYADE). These areas include beaches and their bathing waters, and based on these the annual national reports intended for the public and the European Commission are prepared with the data provided by the authorities in the autonomous communities, responsible for quality control of the bathing waters in their territory.

In 2015, the duration of the bathing season for inland waters was, on average, 86 days in Spain, a day longer than in 2014 which was the shortest since 2006, but one less than in 2013.

At 138 days, Murcia had the longest bathing season, while the shortest was shared by Galicia and Catalonia at just 54 days. Galicia designated three seasons of varying length, Andalusia and Navarre two and the rest one season for all of their inland waters.

When compared with 2014, 2015 showed a reduction in the percentage of sampling points in the categories of excellent and good, falling by 4 and 1.5 percentage points respectively. However, this did not translate directly into a significant rise in the categories of insufficient and poor, but in the appearance of the category Unclassified, which covers sampling points for which the minimum number of samples required by national legislation were not obtained. This year Murcia communicated the removal of one sampling point in its inland waters.

Quality of Inland Bathing Water. Year 2015
No. of sampling points according to their quality category

Excellent	Good	Sufficient	Poor	Unclassified
125	59	20	25	12

Source: MSSSI

These quality levels are reproduced on an autonomous level. In 2015, 9 autonomous communities showed excellent quality for over half of their sampling points. C. Valenciana and the Basque Country in particular stand out with 100% of their sampling points awarded the maximum quality. Córdoba is the only province in Spain without a single bathing zone.

At the end of the 2015 bathing season, a series of data for five consecutive years on the quality of bathing water was made available, based on the application of Royal Decree 1341/2007, of 11 October, on the management of bathing water quality. By virtue of that established in Article 4, 17 inland bathing zones were detected where the competent authority could prohibit bathing on a permanent basis. In the case of poor quality bathing waters, the objective, marked by Article 12.2 of Royal Decree 1341/2007, has not been achieved. It indicated that at the end of the 2015 season all bathing waters should be classified as having at least sufficient quality.

The European Environment Agency Report "Bathing Water Quality in 2015" showed that sufficient quality had at least been achieved for 93.8% of inland bathing waters in the European Union. This represents an increase of 2.5 percentage points in comparison with the 2014 season.

Almost 90% of all inland bathing zones are in lakes, while less than 900 are in rivers. Almost half of the bathing zones in rivers can be found in France.

For the period 2011-2015 the percentage of bathing zones with an excellent classification increased significantly from 70.4% to 81.0%. The most notable increase was between 2012 and 2013 when there was an increase of 4.6%.

Spain is seventh in the EU in terms of the number of sampling points and represents 3.6% of the total in the EU, at a similar level to Austria and Hungary. Germany accounts for almost 30% and France 20%. Italy and the Netherlands also account for around 10%.

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 have been four: “Poor” quality, “Sufficient” quality, “Good” quality and “Excellent” quality. In 2015, "unclassified" sampling points were also included.

Methodological Notes:

- Directive 2006/7/EC governs quality management of bathing waters inside the European Union. In Spain, this directive was transposed by internal order through 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.
- NAYADE is structured by Bathing Zone, defined by the competent autonomous authority as a delimited geographic area no higher than municipal level, comprised of a beach or a body of surface water used for bathing, where bathing is neither expressly prohibited nor is there a permanent recommendation to refrain from bathing, provided there are a large number of bathers or there is an activity nearby directly related to bathing and there is no objective danger to bathers.
- In Spain, in the year 2015, the official census of bathing waters for the 2015 season was comprised of a total of 2,189 sampling points, of which 1,948 were maritime and 241 continental.

Source:

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

Recommended Websites:

- http://www.msssi.gob.es/profesionales/saludPublica/saludAmbLaboral/calidadAguas/aguasBanno/publicaciones.htm
- http://www.eea.europa.eu/publications/european-bathing-water-quality-2015

2.5 LAND

Resolution No. 68 of the General Assembly of the United Nations, of 20 December 2013, declared 2015 as the "International Year of Soils". Soils are a key element for maintaining life on Earth since they serve as the basis for agricultural development, food security and the support of basic functions of eco-systems. It is a special acknowledgement that requires the involvement of all countries so as to protect this resource and highlight the importance of the sustainable management of land as the basis for the maintenance of the functions of the eco-systems and to ensure the development of human societies. This declaration falls within the scope of the "Global Soil Partnership" of the Food and Agriculture Organization of the United Nations (FAO), established in 2012 as a voluntary mechanism to enhance collaboration between countries and institutions for the preservation of soil and its resources.

It must not be forgotten that soil is a vital, finite and non-renewable natural resource. Soils are under pressure from many sources, including urban expansion and industrial and agricultural development, which degrade, exhaust and occupy them. Such factors lead to a loss in its capacity for the performance of its natural functions and as a response element towards other problems such as climate change and its effects, since soil absorbs carbon and may contribute to the mitigation of climate change.

As an example, one of the 17 Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda for Sustainable Development, which was approved in September 2015, explicitly includes soil and establishes as one of its targets: *"By 2030, to combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world"* (Target 3 of Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss).

The European Commission traditionally integrates land within its different actions and programmes; for example, the Roadmap to a Resource Efficient Europe (included within the Europe 2020 Strategy aimed at achieving a no net land take by 2050) and the "7th Environment Action Programme" (which establishes a similar goal so as to limit land occupation). As part of a thematic strategy for soil protection, the Commission is working towards the unification of all these ongoing processes so as to guarantee the sustainable management of soils. It is scheduled to formalise this with a communication on "Land as a resource".

Spain has implemented specific environmental regulations regarding land protection and degradation both at national and regional levels, and it participates actively in international agreements on erosion and desertification.

Act 22/2011, of 28 July, on waste and contaminated land, specifically addresses the issue regarding land degradation due to pollution, whereas the issue regarding land use was addressed at the end of 2015 by means of the approval of Royal Legislative Decree 7/2015, of 30 October, approving the recast text of the Act on Land and Urban Regeneration, which includes the concept of the sustainable, competitive and efficient development of urban environments and which repeals Royal Legislative Decree 2/2008, which approved the recast text of Act 8/2007 on Land.

Distribution of artificial land in Spain

- Within the UE-27, Spain is the country with the second largest area (11.58% of the total UE-28 area), after France (12.63%).
- 3.54% of the Spanish area was classified as artificial in 2012, a percentage lower than the European average of 4.13%.
- Such a percentage meant that, in 2012, Spain was 18th in the EU-27 in terms of artificial surface.

Land occupation: area occupied by urban plots

- Between 2006 and 2015, the area occupied by urban plots increased by 19.8%, although it decreased by 0.2% in 2014 and 0.1% in 2015.
- In 2015, 57.1% of the total urban area, which amounted to 1.135 million hectares, corresponded to built-up areas.

Soil loss due to erosion

- Average annual soil losses estimated in Spain range between 4.7 t/ha in Castilla y León and 23.7 t/ha in Catalonia.
- The percentage of surface affected by moderate erosion processes is high in Spain.

Distribution of Artificial Land in Spain

Distribution of artificial land in Spain in 2012

	Total surface	Artificial surface	Artificial built-up surface	Artificial non built-up surface
Area of Spain (km^2)	498,511	17,670	5,435	12,235
% of total	100.00	3.54	1.09	2.45
% of EU-27	11.58	9.93	9.38	10.19

Source: Eurostat

- ***Within the UE-27, Spain is the country with the second largest area (11.58% of the total UE-28 area), after France (12.63%)***
- ***3.54% of the Spanish area was classified as artificial in 2012, a percentage lower than the European average of 4.13%***
- ***Such a percentage meant that, in 2012, Spain was 18th in the EU-27 in terms of artificial surface***

In 2015, a review was carried out of the figures corresponding to occupation of artificial land in each country. Although this indicator was included in the "Environmental Profile of Spain 2014", the updating of this information renders necessary its renewed analysis, taking into account the revised figures.

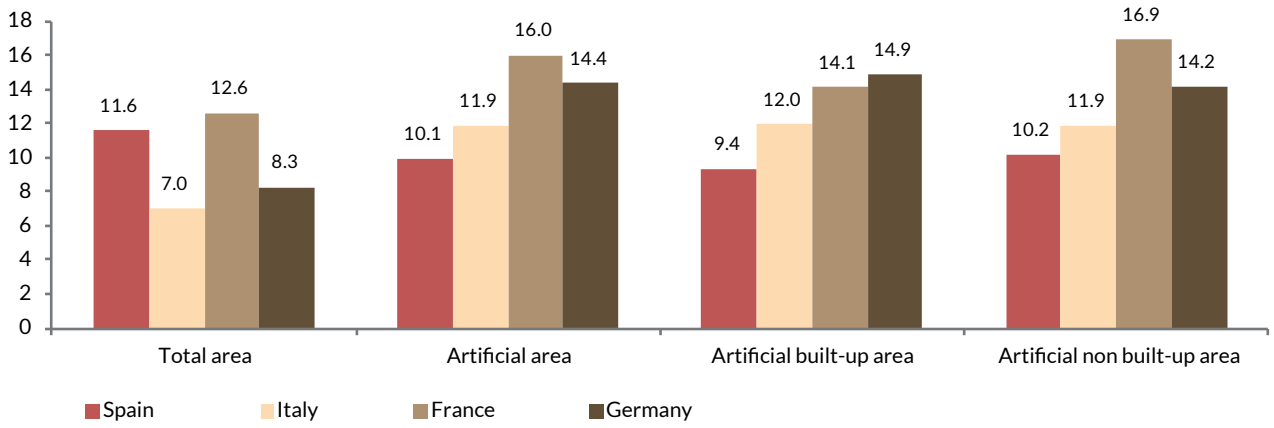
According to this latest update conducted by Eurostat, Spain's artificial surface amounted to 17,670 km^2 to in 2012. This figure represents 3.54% of its total area (498,511 km^2), a percentage which is lower than that of the European average (4.13%).

Within the European framework (only in relation to the EU-27) and according to the same review, Spain accounted for 11.58% of the total area of the EU in 2012. This accounts for 9.93% when considering the entire artificial surface. Only France (the artificial surface of which represents 16.03% of the total of the UE-27), Germany (14.38%) and Italy (11.91%) contributed a greater proportion of artificial surface in the EU-27.

Whereas the proportion of built-up and non built-up artificial surface is quite similar in the EU, the portion of built-up artificial surface in Spain is less than half that of the non built-up surface, with a large gap to the consolidation of built-up surfaces.

Due to the development of the construction sector in Spain until 2007 (years before the economic and financial crisis), the percentage of artificial surface increased remarkably. This was mainly farming land close to inland urban areas and land located in coastal areas, where this reconversion of land use arose from tourism development.

Share of the total and artificial surface of the EU-27 (%)
Four countries with greatest share. 2012



Source: Eurostat

Definition of the Indicator:

The indicator shows the area occupied by artificial land in Spain within the framework of the information obtained by Eurostat for the EU-27, stating which areas are built-up and which are not. Artificial areas are those characterised by an artificial and often waterproof surface, 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 waterproof artificial surfaces of hard materials.

Methodological Notes:

- Data corresponding to 2012, updated by Eurostat as of 31/05/2016. For this reason the development of this indicator is the same as in the last edition of the "Environmental Profile of Spain 2014", with the corresponding information update.
- 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 **L**and **U**se and **C**over **A**rea frame **S**urvey. The objective of the survey is to gather harmonised information on the cover and use of land. This survey also provides territorial information for a better analysis of the interactions between agriculture, the environment and land management. Since 2006, Eurostat has carried out LUCAS surveys every three years; the 2006 survey 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:

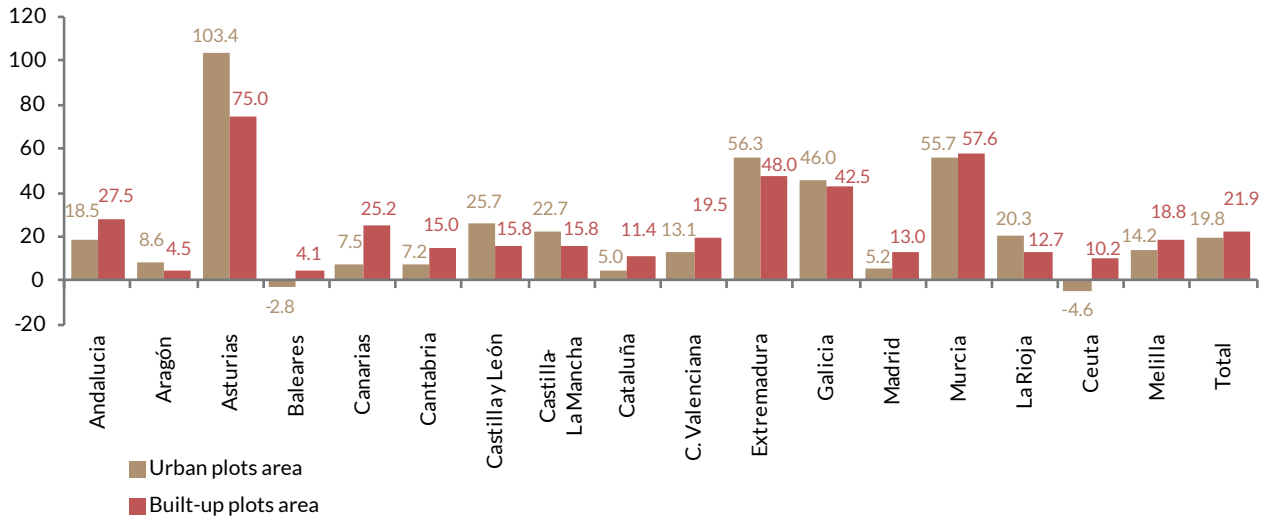
Eurostat. Information on the website: http://ec.europa.eu/eurostat/en/web/products-datasets/-/LAN_LCV_ART

Recommended Websites:

- 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

Variation in the area of urban plots and the area of built-up plots between 2006 and 2015 (%)



Source: Directorate General of the Land Registry

- ***Between 2006 and 2015, the area occupied by urban plots increased by 19.8%, although it decreased by 0.2% in 2014 and 0.1% in 2015***
- ***In 2015, 57.1% of the total urban area, which amounted to 1.135 million hectares, corresponded to built-up areas***

In 2012, the area of urban plots in Spain (excluding the Basque Country and Navarre) reached 1,134,958.7 ha. Its distribution between built-up and non built-up areas was 57.1% and 42.9% respectively, corresponding to 647,862.34 ha in the case of the former and 487,096.3 ha in the case of the latter.

The period under analysis corresponds to the years 2006-2015. It is noticeable that the area covered by urban plots increased by 19.8% over this period. Regarding urban plots, built-up areas increased at a slightly higher pace, reaching 21.9%, whereas non built-up urban plots presented a smaller increase, just 17.1%.

By autonomous communities, and for the same period 2006-2015, the largest variations in the total area covered by urban plots (including the built-up and non built-up categories) correspond to Asturias, Murcia and Extremadura. The increase in the case of the former is particularly noteworthy, having exceeded 100% during the period, while in the case of the latter two it was more than 50%.

The decreases in urban plot areas experienced in Ceuta and the Balearic Islands must also be highlighted.

The highest annual growth in the area covered by urban plots, both in relation to total area and built-up areas (5.6% and 4.9% respectively) was recorded in 2009. In both cases, these percentages were more than double those experienced in other years. It is also a turning point in the growth trend, since from that year onwards there is a slowdown in such growth partly due to the effects of the economic crisis and the crisis of

the construction sector. Even though this sector has particularly suffered the consequences of the crisis, the trend in the land qualification process leads to a slowdown in growth, not to a direct decrease. As previously mentioned, until 2012, increases in the surfaces of urban plots were more moderate, at around 2.5%. In 2013, growth was lower than in previous years (only 1.4%), leading to decreases in the area covered by urban plots over the two following years (-0.2% in 2014 and -0.1% in 2015). Areas corresponding to built-up urban plots show a trend with significant variations; we must highlight the small growth experienced in 2015, amounting to 0.4%.

Total area of total urban plots and urban plots built-up in Spain and variation from previous year and between 2006 and 2015

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
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	1,134,959
Variation from previous year (%)		2.2	2.7	5.6	2.3	2.3	2.2	1.4	-0.2	-0.1
Change 2006-2015 (%)	19.8									
Area of built-up urban plots (ha)	531,255	541,823	553,175	580,413	594,967	606,859	622,449	631,614	645,011	647,862
Change 2006-2015 (%)		2.0	2.1	4.9	2.5	2.0	2.6	1.5	2.1	0.4
Change 2006-2015 (%)	21.9									

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 Register (excluding the Basque Country and Navarre) between years 2006 and 2015 expressed in %.

Methodological Notes:

- Within the scope of this indicator, data corresponding to the Basque Country and Navarre 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 surveys were conducted in 2009 and 2012; the Land Registry is being regulated for the period 2013-2016. 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 (TRLCI, 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 Navarre.

Source:

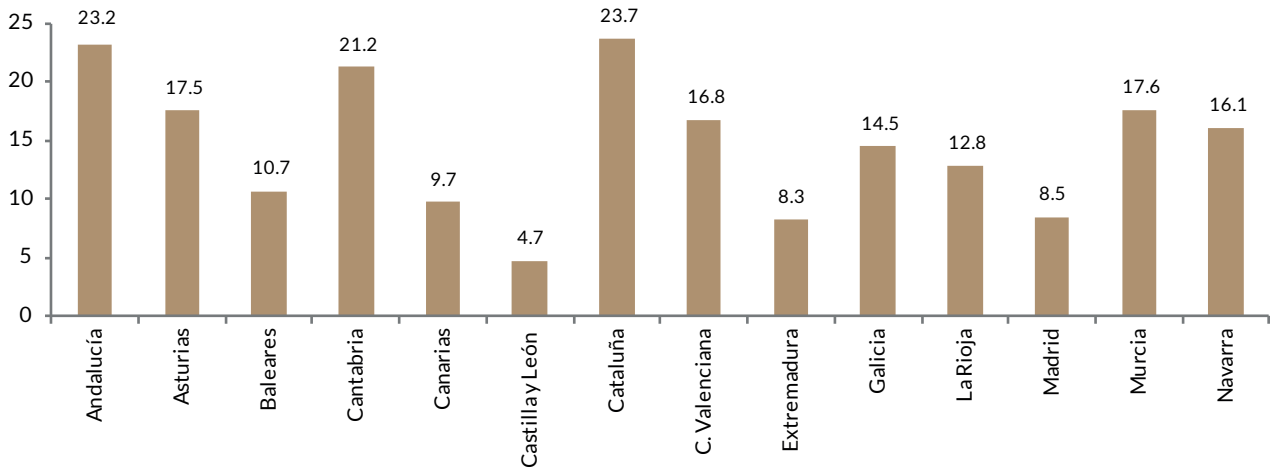
Directorate General of the Land Registry. Ministry of Finance and Public Administrations. Information on the website, on the Website of the General Directorate of the Land Registry: Land Registry: Home / Disclosure of Land Registry Information / Statistics / Land Registry / Urban

Recommended Websites:

- http://www.catastro.meh.es
- http://www.catastro.meh.es/documentos/estadisticas_Metodologia_Catastro_2012.pdf

Soil Loss Due to Erosion

Average annual soil losses (t/ha). Year 2015



Source: MAGRAMA

- ***Average annual soil losses estimated in Spain range between 4.7 t/ha in Castile and León and 23.7 t/ha in Catalonia***
- ***The percentage of surface affected by moderate erosion processes is high in Spain***

Erosion leads to soil loss. The National Soil Erosion Inventory (INES, as per the Spanish acronym), with an innovative and detailed work (with a 1:50,000 scale and the performance of field works improving the application of the RUSLE model), calculates the status of soil erosion in Spain.

According to this data, in 2015 Spain experienced soil loss corresponding to medium-level erosion; erodible surfaces are mainly affected by moderate erosion processes.

By autonomous community, it can be seen that soil loss rates are lower in the Central Plateau (Meseta Central) and inland territories. Excluding Aragón, Castilla-La Mancha and the Basque Country, where data remains unavailable, average annual soil losses in the year 2015 ranged from 4.7 t/ha in Castile and Léon, just under 10 t/ha in Extremadura, Madrid and the Canary Islands, between 10 and 15 t/ha in the Balearic Islands, La Rioja and Galicia and those autonomous communities where losses exceeded 15 t/ha.

Classification of soils according to their erosion level indicates that soil areas showing moderate erosion processes the most widespread in all autonomous communities (more than 50%). However, there are remarkable differences as regards vulnerability, ranging from 54.4% in Catalonia to 89.1% in Castile and León.

Nevertheless, it is the percentage of soils affected by high erosion processes that defines the final soil loss rate. This fact can be evidenced by the correlation between the autonomous communities with the highest percentage of soil undergoing high erosion processes and those showing higher average annual soil losses (t/ha year).

**Soil surface affected by erosion (%)
Year 2015**

AUTONOMOUS COMMUNITY	Moderate erosion processes (%)	Medium erosion processes (%)	High erosion processes (%)
Andalusia	57.61	19.76	22.63
Catalonia	54.41	24.86	20.74
Cantabria	59.91	22.39	17.70
Asturias	61.92	21.67	16.42
Navarre	65.64	18.79	15.57
Murcia	66.41	18.13	15.46
C. Valenciana	70.13	16.04	13.83
La Rioja	65.84	20.43	13.72
Galicia	74.34	13.06	12.61
Balearic Islands	76.62	13.69	9.70
Canary Islands	69.25	21.86	8.89
Madrid	81.28	10.89	7.83
Extremadura	83.75	9.81	6.44
Castilla y León	89.13	7.77	3.10

Source: MAGRAMA

Definition of the Indicator:

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

Methodological Notes:

- The INES is part of the Spanish Inventory of Natural Heritage and Biodiversity, and is carried out via the Spanish Forest Statistics System in accordance with the Spanish Forest Plan, Act 43/2003, of 21 November, on Forestry and Act 42/2007, of 13 December, on Natural Heritage and Biodiversity.
- The inventory is divided into five sections according to the various types of erosion: "Sheet and rill erosion", "Gully and ravine erosion", "Deep erosion", "Bank erosion" and "Wind erosion".
- Sheet and rill erosion is a quantitative estimate of soil losses by means of the application of the model adopted in Europe: "RUSLE" ("Revised Universal Soil Loss Equation"). It classifies the results of the calculation into erosion levels:

  1) 0-5 t/ha year 3) 10-25 t/ha year 5) 50-100 t/ha year 7) >200 t/ha year

  2) 5-10 t/ha year 4) 25-50 t/ha year 6) 100-200 t/ha year
- In the indicator, 'Moderate' soil loss interval is defined as 0-10 t/ha year, 'Medium' as 10-25 t/ha year and "High" as over 25 t/ha year.
- Erodible surface is that surface which may suffer erosion processes; it is calculated by subtracting the artificial surfaces, surface water bodies and wetlands from the geographical surface.

Source:

Data provided by the Directorate-General for Rural Development and Forest Policy. Secretariat-General for Agriculture and Food. Ministry of Agriculture, Food and the Environment.

Recommended Websites:

- http://www.magrama.gob.es/es/desarrollo-rural/temas/politica-forestal/inventario- cartografia/inventario-nacional-erosion-suelos/default.aspx

2.6 NATURE

The richness of Spain's biological biodiversity, not just in terms of species diversity but also the genetic diversity of the species and the richness of the ecosystems, is beyond doubt: Spain is one of the countries with the greatest biodiversity in the European Union.

Among the initiatives developed in 2015 for this purpose were, for example, the approval of Law 33/2015 of 21 September, amending Law 42/2007 on Natural Heritage and Biodiversity. This was the first law to stipulate that land and property registries would provide information on environmental protection that affects surfaces in protected spaces. This enables increased transparency and legal security and guarantees better protection of these spaces, as there is a public spatial reference for such areas.

The new Law improves the protection and conservation of species under threat, by regulating the importation of species likely to damage biodiversity and ensuring that the reintroduction of species that have disappeared is done with all guarantees.

It also guarantees the correct implementation of the Nagoya Protocol on Access to Genetic Resources and Equitable Sharing of Benefits arising from their Utilization, and improves the management of protected spaces, through support for economic activities consistent with their conservation that contribute to the well-being of the local populations and the creation of employment. It also includes measures for preventing, mitigating and adapting to the effects of climate change on biodiversity.

Furthermore, in relation to one of the greatest threats to our biodiversity, in this period the Spanish proposal was prepared for the drawing up and publication of the List of Invasive Alien Species of Union Concern, for compliance with Regulation EU 1143/2011. The List is expected to be published in 2016.

In relation to forest ecosystems, particularly noteworthy was Madrid's hosting in October 2015 of the 7th Annual Ministerial Conference and the Extraordinary Ministerial Conference of FOREST EUROPE, the high-level political process that fosters cooperation for the sustainable protection of the forests of the Pan-European region, of which Spain has held the presidency since 2011. The ministerial agreements signed in Madrid shall serve to establish the lines of action to be implemented in the most immediate-term future in order to take on those challenges faced in Europe to ensure the conservation of forests and their multiple functions.

Also worthy of note are the advances made in the declaration of protected spaces over the past year: in 2015 the surface area included in the Natura 2000 Network grew by 6%; the Picos de Europa National Park was extended by almost 2,500 hectares and two new Biosphere Reserves were declared.

In relation to the health of forests, in the year 2014 the general condition of trees showed slight improvement in comparison with the previous year; 85.1% of trees studied were deemed healthy, up from 83.4% in 2013. In 2015, there were no data available of the Forest Damage Monitoring Network (Network Level 1).

Positive news such as the above is encouraging for the intensification of efforts designed for the conservation of our country's biodiversity.

Protected Areas

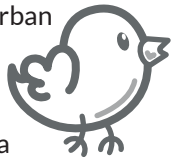
- The surface area protected in Spain reached 24,954,269 ha in 2015, which represents an increase of 6.3% from 2014.
- Spain is the country in the European Union with the largest surface area within the Natura 2000 Network: almost 20% of the surface area that makes up the Natura 2000 Network in the EU is Spanish.

Forest reproductive material

- The National Catalogue of Basic Materials guarantees users the origin and quality of forest reproductive material.
- In 2015, 49 units were added to the National Register of Basic Materials.
- That year a total of 7,981 units were added to the National Catalogue.

Trends in common bird populations

- The Common Reproductive Birds Monitoring Programme (SACRE, as per the Spanish acronym) is one of the best examples of "citizen science".
- There is a declining trend in the population of agricultural and urban environments and an increase in forest environments. Existing populations in bush environments have maintained a certain level of stability.



Forest land and other forest formations

- Spanish forests cover more than 27.7 million ha, which represents 55% of the total national surface area.
- More than 66% of the mountains, 18.4 million ha, are forests. The remaining 34% corresponds to treeless areas or areas covered by sparse trees.
- Spain is the second country in the EU in terms of forest cover, after Sweden. It also offers the third largest expanse of forest area in the EU.

Diversity of wild terrestrial species

- In terms of the conservation status of existing wild terrestrial species in Spain, it is possible to state that our country is home to a richness of species diversity that is among the very best in Europe.
- Around one quarter of existing terrestrial vertebrates in Spain are considered under threat to a greater or lesser degree.

Environmental Monitoring

- In 2014, the number of legal procedures open in relation to environmental issues was 5,530 and the sentences given in the area totalled 1,226.
- In 2015, the Guardia Civil were aware of a total of 119,190 infractions of an administrative nature (24% less than in 2014) and 2,505 criminal infractions (3% more than in 2014) relating to environmental issues.

Protected Areas

Protected areas in Spain. Year 2015

Protection programmes (ha)		Land		Marine		Total area protected (ha)
		(ha)	IEP Land (%)	(ha)	IEP Marine (%)	
Total protected area (ha)		16,429,853.24	32.46	8,524,416.00	7.99	24,954,269.24
PNAs		7,323,302.30	14.47	515,837.56	0.48	7,839,139.86
Natura 2000 Network		13,813,605.63	27.29	8,430,448.08	7.90	22,244,053.72
Other international programmes	MAB	5,284,005.45	10.44	485,267.36	0.46	5,769,272.81
	Ramsar	281,220.48	0.56	25,605.52	0.02	306,826.00
	SPAMI	51,857.86	0.10	96,625.70	0.09	148,483.56
	OSPAR	0.00	0.00	2,034,218.94	1.91	2,034,218.94

Source: MAGRAMA

- ***The total protected area in Spain reached 24,954,269 ha in 2015, which represents an increase of 6.3% from 2014***
- ***Spain is the country in the European Union with the largest surface area within the Natura 2000 Network: almost 20% of the surface area that makes up the Natura 2000 Network in the EU is Spanish***

Spain's protected area continues to grow. In 2015, it grew by some 6.3% to reach a total of 24,954,269 hectares, of which 16,429,853 hectares are terrestrial and 8,524,416 hectares are marine. This means that 32.46% of the terrestrial surface and 7.99% of the marine surface of the country enjoy some degree of protection.

Of the different types of protected natural areas existing in Spain specified by Law 42/2007 on Natural Heritage and Biodiversity, amended in 2015 by Law 33/2015, it must be highlighted that the surface area comprising the Natura 2000 Network rose to 22,244,054 hectares in 2015 (6.21% more than in 2014).

This area represented 27.29% of the national terrestrial area (13,813,605.63 ha). In terms of the total marine area, 7.90% (8,430,448.08 ha) was included in the network. Altogether, this represents almost 20% of the total EU surface area included within Natura 2000, making Spain the EU country with the most surface area within this Network. As of 31 December 2015, Natura 2000 in Spain encompassed 1,467 Sites of Community Importance (SCIs), 644 Specially Protected Areas for Birds (SPABs) and 1,037 Specially Protected Areas (SPAs), which represents approximately 70% of the total SPAs designated in our country.

The National Parks Network saw an increase in surface area during the year, by extending the Picos de Europa National Park by 2,467 hectares. After this extension (the first was brought about under the new National Park Act approved in 2014), the surface area of the National Park grew to a total of 67,127 hectares, while the National Parks Network as a whole rose to a total surface area of 384,738 hectares.

Meanwhile, with regard to international protection initiatives, the importance of the Man and Biosphere (MAB) Programme must be underlined once again this year. Led by UNESCO, this programme has 47 existing Biosphere Reserves in Spain in 2015, distributed across 15 of the 17 autonomous communities; of these 47 Reserves, three are cross-border, with one of which intercontinental. The Spanish Biosphere Reserves Network grew in 2015 with two new Biosphere Reserves declared: the Cross-border Meseta Biosphere Reserve between Spain and Portugal (1,132,607 hectares, of which 475,241 hectares are inside Spanish territory), and the Macizo de Anaga Biosphere Reserve in Tenerife (48,727.61 hectares, of which 15,489.01 are land territory and 33,238.6 hectares are marine territory). With these two new additions, Spain moved alongside the United States as the country with the joint-highest number of such spaces in the world.

Definition of the Indicator:

Percentage of total terrestrial and marine surface area of Spain under protection.

The indicator offers disaggregated data for each instrument of protection: Protected Natural Areas (PNAs), spaces of the Natura 2000 Network and areas protected by international instruments (Biosphere Reserves declared within the framework of the Man and Biosphere Reserve of UNESCO, Ramsar wetlands of international importance, protected marine environments of the North-East Atlantic (OSPAR)) and Specially Protected Areas of Mediterranean Importance (SPAMI).

Methodological Notes:

- Law 33/2015, which modified Law 42/2007 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 one of 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.*
  - *Are specially dedicated to the protection and maintenance of biological diversity, geodiversity and natural resources and associated cultures."*
- Natura 2000 is a European ecological network made up of Specially Protected Areas (SPAs) - and Sites of Community Importance (SCIs) until they were transformed into SPAs - established 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). The objective of Natura 2000 is to guarantee the long-term conservation of certain habitats and species. It is the main instrument for nature conservation in the European Union.
- For the purposes of calculating the indicator:
  - Index of the area of protected land spaces (IEP,as per the Spanish acronym, Land). measured as a % and calculated as follows = [Protected terrestrial area (ha) ×100] / Total land area of Spain (ha)
  - Index of the area of protected marine spaces (IEP, as per the Spanish acronym, Marine). measured as a % and calculated as follows = [Protected marine area (ha) ×100] / Total land area of Spain (ha)
  - Total land area of Spain (ha)= 50,622,367.55
  - Total marine area of Spain (ha)= 106,648,205.84
- The total protected area is not equivalent to the sum of the different programmes for the different forms of protection as there are some overlaps. That is to say, a certain area may be part of a PNA and at the same time be included in the Natura 2000 Network and/or one or several of the various spaces protected by international instruments (Biosphere Reserves, Ramsar wetlands etc.). The areas in which different protection instruments overlap are only counted once.

Source:

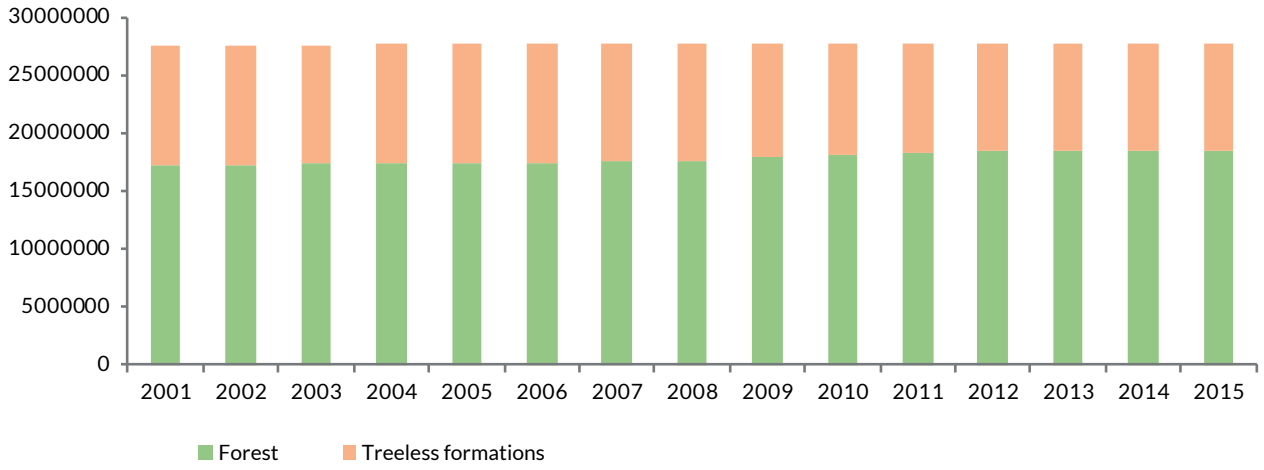
Nature Databank. Directorate-General for Environmental Quality and Assessment and Natural Environment. Ministry of Agriculture, Food and the Environment.

Recommended Websites:

- http://www.magrama.gob.es/es/biodiversidad/servicios/banco-datos-naturaleza/
- http://www.magrama.gob.es/es/biodiversidad/temas/espacios-protegidos/
- http://www.magrama.gob.es/es/parques-nacionales-oapn/

Forest Land and Other Forest Formations

Forest land and other forest formations



Source: MAGRAMA

- *Spanish forests cover more than 27.7 million ha, which represents 55% of the total national surface area*
- *More than 66% of the mountains, 18.4 million ha, are forests. The remaining 34% corresponds to treeless areas or areas covered by sparse trees*
- *Spain is the second country in the EU in terms of forest cover after Sweden. It also offers the third largest expanse of forest area in the EU*

Spanish forests cover more than 27.7 million ha, which represents 55% of the total national surface area. Over 66% of mountains, 18.4 million ha, are forests, which is equivalent to 0.40 hectares of forest per inhabitant. The remaining area, 9.3 million ha, corresponds to treeless areas or areas with sparse tree cover.

As is well known, mountains provide a broad array of ecological services, serving as a habitat for animal and vegetation species, helping to protect the soil and the water system and contributing to the fight against climate change.

One must bear in mind that Spain is home to 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.

The tree-covered area is classified according to the type of forest: deciduous, coniferous and mixed (see notes section). 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 zone, Galicia, the Balearic Islands and Catalonia.

According to the number of species present and their dominance, 60% of forest area is comprised of formations where there is a dominant species (see notes section). In Spain, over 80% of forests are comprised of two or more species of trees.

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 to 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 treeless mountain area (CCF < 5%). It includes scrub lands, grazing lands and deserts. Equivalent to the FAO's definition of *Other Wooded Lands (OWL)*.
- In the year 2015, there were no changes made to Spain's Forestry Map or the National Forest Inventory and, therefore, the corresponding indicator remains unchanged. Work is currently underway in the autonomous communities of Catalonia and Extremadura and the final results of this are expected to be included in the next edition of the Environmental Profile of Spain.
- Forest area is classified as deciduous, coniferous and mixed woodland 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.
- A species is considered to be dominant when the percentage of occupation of a single species is equal to or above 70% or where none of the accompanying species reaches 30% occupation.

Source:

Data provided by the Sub-directorate General for Forestry and Mountains. Directorate-General for Rural Development and Forest Policy. Ministry of Agriculture, Food and the Environment.

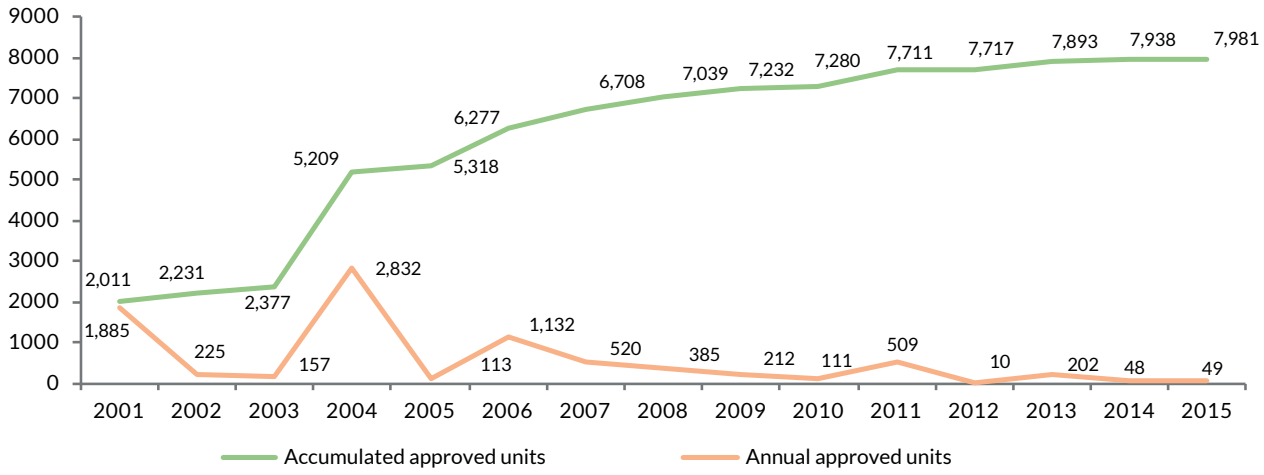
The National Forest Inventory (IFN) and its cartography base the Forestry Map of Spain (MFE) are both prepared provincially every ten years.

Recommended Websites:

- http://www.magrama.gob.es/es/ministerio/servicios/analisis-y-prospectiva/AyP_serie_n%C2%BA8_diagn%C3%B3stico_sector_FORESTAL_tcm7-348019.pdf

Forest Reproductive Material

Number of approved units in National Catalogue of Basic Materials



Source: MAGRAMA

- ***The National Catalogue of Basic Materials guarantees users the origin and quality of forest reproductive material***
- ***In 2015, 49 units were added to the National Register of Basic Materials***
- ***That year a total of 7,981 units were added to the National Catalogue***

In 2015, there were a total of 49 approved units added to the National Register of Basic Materials. To estimate the total calculation it is necessary to subtract the items removed throughout the year, six in total, which means that the total number of basic materials authorised in 2015 rose to 7,981. The populations, plantations and clones from which forest reproductive material is obtained (seeds and plants) make up the Basic Material.

This material is used for forest re-population and includes the following categories of elements: seed sources, stands, seed orchards, family progenitors, clones and their mixes. The National Catalogue of Basic Materials is the register for all these types of basic material, kept in order to obtain the different categories of identified, selected, qualified and controlled reproductive material. The National Catalogue of Basic Materials guarantees users the origin and quality of forest reproductive material.

The table shows the composition of the register. Of all the approved units, 7,369 correspond to seed sources, slightly up on 2014 when this figure was 7,362. Regarding the registered area, in 2015 this figure reached 5,872,894 ha, compared to 5,872,080 hectares in 2014, representing an increase of almost 814 ha.

There are differences between the units approved by each autonomous community. As in other years, Castile and León was the autonomous community with the highest number of approved units. In 2015, 3,500 units were approved and 662,179 ha of surface area authorised. Once again, the C. Valenciana and La Rioja occupy second and third position respectively with 777 units and 852,923 ha, and 756 units and 1,623,569 ha authorised respectively.

Existing approved units in the National Catalogue of Source Materials. Year 2015

TYPE OF BASIC MATERIAL	CATEGORY	NO. OF APPROVED UNITS AS OF 31/12/2015	SURFACE OF APPROVED UNITS (ha)
Seed sources	Identified	7,369	5,839,841.68
Selected stands	Identified	31	13,994.39
	Selected	387	18,953.55
Seed orchards	Qualified	26	104.00
	Controlled	2	
Family progenitors	Qualified	36	Unquantified. Insignificant
	Controlled	4	
Clones	Qualified	80	Not applicable
	Controlled	46	
TOTAL		**7,981**	**5,872,893.62**

*It should be noted that areas included in the calculations sometimes overlap with other areas containing different species. Also, for practical reasons, sometimes entire municipal districts or mountains are registered whose land area may be greater than that actually occupied by the forest.

Source: MAGRAMA

Definition of the Indicator:

This indicator studies the evolution of the approved units that comprise the National Catalogue of Basic 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. The 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 and phenotypic profiling of each of the approved materials and is carried out by the Directorate General of Rural Development and Forestry Policy (MAGRAMA) in collaboration with the autonomous communities. The new basic materials are published in the Official State Gazette (BOE) and form part of the Community List of Basic Materials.

Source:

Situation of National Register and Catalogue of Basic 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

Diversity of Wild Terrestrial Species

Diversity of wild terrestrial species

	Total No. of species	No. of species under threat
Terrestrial mammals	115	22
Birds	336	69
Amphibians	39	10
Reptiles	84	20
Inland fish	85	55
Terrestrial invertebrates	57,000	>258 (>0.5%)
Vascular plants	7,069	1060 (15-18%)
Non-vascular terrestrial plants	>2000	>170 (>9%)
Bryophytes	1100	170 (15%)
Fungi	23,000	?
Total estimated terrestrial species	**91,000 (approximately)**	**?**

Source: MAGRAMA

- ***In terms of the conservation status of existing wild terrestrial species in Spain, it is possible to state that our country is home to a richness in species diversity that is among the very best in Europe***
- ***Around one quarter of existing terrestrial vertebrates in Spain are considered under threat to a greater or lesser degree***

There are great difficulties in establishing the real number of existing wild species in Spain and their conservation state. In fact, due to the lack of information relating to many taxonomic groups (especially invertebrates and fungi) it would not presently be possible to complete a precise analysis of the evolution of the number and level of threats from all the wild species that inhabit our country. Nevertheless, little by little, advances are being made in this area, improving our level of knowledge.

In 2015 for example, a project was initiated for the normalisation of the information that existed on wild species in the different sources of information that comprise the Spanish Inventory of Terrestrial Species (IEET, as per the Spanish acronym).

The first objective of this project consists of establishing, in collaboration with leading scientific societies, the standard list of the main taxonomic groups: land mammals, birds, amphibians, reptiles, inland fish and vascular flora. Of these, only those relating to vertebrates and vascular flora can be considered representative.

Despite the current lack of precise information for this indicator, with the data available it is possible to affirm that the diversity and richness of wild terrestrial species in Spain is among the highest in Europe. In terms of vertebrates alone, it is estimated that there are at least 659 species in Spain. In terms of conservation, 176 of these (26.7% of the total) are considered threatened.

Definition of the Indicator:

Number of wild terrestrial species that exist in Spain and the number of these under some level of threat.

Methodological Notes:

- The Terrestrial Species Index (IET, as per the Spanish acronym) is measured numerically and is calculated as the number of terrestrial species that live in Spain.
- This information is taken from the Spanish Inventory of Terrestrial Species (IEET, as per the Spanish acronym). The IEET 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.
- The categories of status of conservation assigned to each species compiled in the IEET correspond to the system developed by the International Union for Conservation of Nature (IUCN).

Source:

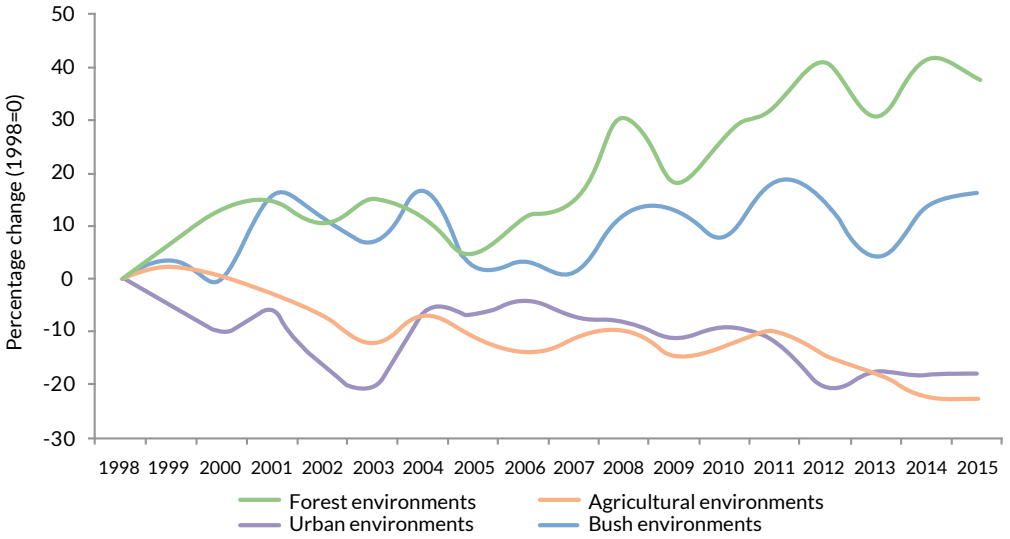
Spanish Inventory of Terrestrial Species (IEET, as per the Spanish acronym). Nature Databank. Sub-directorate General for the Natural Environment of the Directorate General of Quality and Environmental and Nature Assessment.

Recommended Websites:

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

Trends in Common Bird Populations

Trends in common bird populations by environment.
Percentage change (1998=0)



Source: SEO/BirdLife

- ***The Common Reproductive Birds Monitoring Programme (SACRE, as per the Spanish acronym) is one of the best examples of "citizen science"***
- ***There is a declining trend in the population of agricultural and urban environments and an increase in forest environments. Existing populations in bush environments have maintained a certain level of stability***

Given that they are easy to sample, birds are a prime indicator of the status of biodiversity; they are present in all kinds of habitats and the evolution of their populations is influenced by multiple ecological factors.

In this sense, if the population trends over the last six years are analysed for this fauna group, one can observe that they present significant differences based on the type of environment.

Thus, looking at the data compiled through the SACRE programme since 1996, it can be stated, for example, that bird populations linked to agricultural environments have shown a declining trend for several years. And although in 2015 the information registered seems to indicate a slight increase in the bird populations associated with this type of habitat, the best inter-annual increase registered this year does not go far enough to reverse the decrease accumulated over the last number of years: the 25 bird species associated with agricultural environments showed a 23% decline in 2015 from the base year (1998). The decline seems to be due to the intensification of agriculture, which is normally associated with an increase in the use of pesticides and the loss of traditional agricultural mosaics where cultivated areas, isolated trees and shrub areas would be interspersed.

The same occurs in the case of birds associated with urban environments, whose populations also show a declining trend. In 2015 for those birds most representative in urban environments where the majority of the population live, an overall decline of 18% since 1998 can be observed.

More encouraging, however, are the registers relating to bird population in forest areas (forest environments). Despite the existence of annual fluctuations that have not always seen growth, the overall trend has clearly been a positive one for many years. This was also the case in 2015 compared to the year before, although the registered population growth was only gradual.

The trend for bird population associated with bush environments is that which has, despite the fluctuations recorded, remained the most stable since 1998. Over the last two years, these populations have experienced a certain level of growth.

Definition of the Indicator:

Annual percentage change in the population of common birds in Spain from the population in the base year, 1998.

The trends can be seen when the bird population is separated by different type of environment: agricultural, urban, forest, bush.

Methodological Notes:

- This indicator is calculated in Spain by the Spanish Ornithology Society (SEO/BirdLife) through the Common Reproductive Birds Monitoring Programme (SACRE, as per the Spanish acronym). The programme is carried out with the participation of close to 1,000 volunteers, in one of the best examples of "citizen science" in our country.
- To calculate this indicator, the following must be taken into consideration:
- The Index of populations of common birds (IPA, as per the Spanish acronym) is measured as a % and calculated as follows IPA = [No. of birds in the current year x 100] / No. of birds in the base year.
- The base year is 1998: although SACRE has been running since 1996, 1998 was the first year that samples were taken for the whole state using a common methodology.
- The methodology used for sampling can be consulted by visiting the following link: http://www.seo.org/wp-content/uploads/2012/04/instrucciones_-sacre_-2013_3.pdf

Source:

- Nature Databank. Directorate-General for Environmental Quality and Assessment and Natural Environment. Ministry of Agriculture, Food and the Environment.
- Spanish Ornithology Society, 2016. SEO/BirdLife Avifauna Monitoring Programmes. Year 2015.

Recommended Websites:

- http://www.seo.org/2012/05/07/resultados-de-los-programas-de-seguimiento-de-avifauna/
- http://www.seo.org/2012/04/13/sacre/

Environmental Monitoring

Legal procedures and sentences imposed for environmental crimes

Source: General State Prosecutor's Office

- ***In 2014, the number of legal procedures open in relation to environmental issues was 5,530 and the sentences given in the area totalled 1,226***
- ***In 2015, the Guardia Civil were aware of a total of 119,190 infractions of an administrative nature (24% less than in 2014) and 2,505 criminal infractions (3% more than in 2014) relating to environmental issues***

According to data provided by the Coordinating Prosecutor's Office for the Environment and Urban Planning, in 2014 the number of legal procedures in relation to environmental issues was 5,530. Of these, the majority (2,160 or 39% of the total) were related to forest fires, followed by those relating to territorial and urban planning and development (910 proceedings, 16% of the total), flora and fauna (759 proceedings, 14% of the total), mistreatment of domestic animals (681 proceedings initiated, 12% of the total). Proceedings relating to historic heritage (500 proceedings, 9% of the total) and other environmental issues (520 proceedings, 9% of the total) completed the list.

The number of judgements handed down goes some way towards completing the above information to give us an idea of the judicial activity carried out. In 2014 the total number of judgements delivered in relation to environmental issues rose to 1,226. This represented a year on year increase of close to 4% from 2013 (1,180). This was an increase of 26% compared with the data from 2010, when 969 judgements handed down, and 124% in comparison to the base year of 2007 (548).

Of the 1,226 sentences imposed in 2014, the majority (929, 76% of the total) were convictions. Of these, half (465 convictions) were, as in previous years, related to territorial and urban planning and development. Next were convictions for crimes against flora and fauna and forest fires, with 171 and 170 respectively (18% of the total in each case).

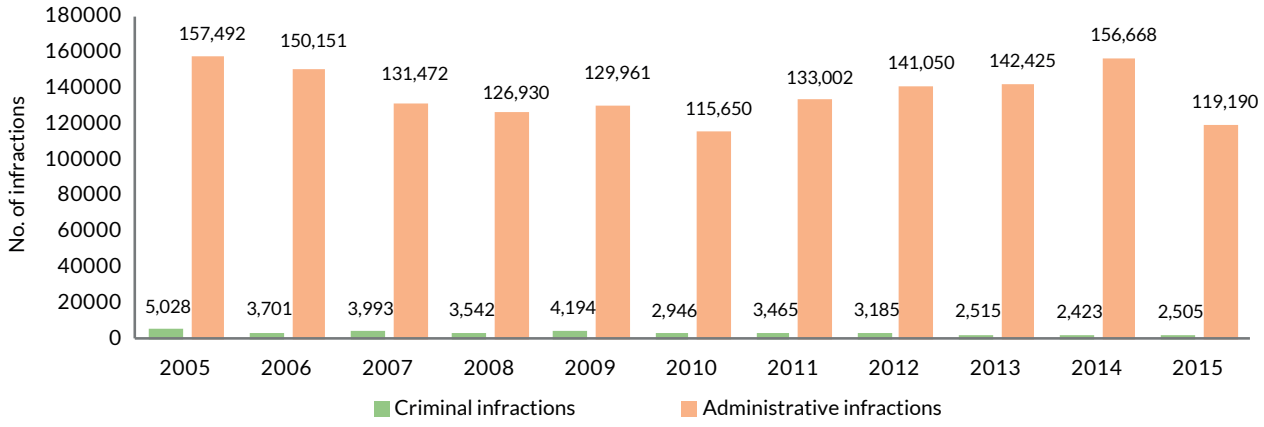
In the case of the 297 acquittals in 2014, the majority were also related to issues around territorial and urban planning and development (155, 52% of total acquittals). These were followed by the 57 acquittals in cases of crimes against flora and fauna (19% of the total) and 35 relating to forest fires (12% of the total).

The Prosecutor's information is complemented by that provided by other police and judicial authorities. In this sense, the data provided by the Guardia Civil contribute to having a clearer picture of the environmental crimes committed in Spain.

In 2015, the Guardia Civil had knowledge of a total of 119,190 infractions of an administrative nature and 2,505 criminal infractions (including crimes and offences) relating to environmental issues. The majority of these infractions were tackled by the Nature Protection Service (SEPRONA), the body of the Guardia Civil dedicated specifically to the conservation of nature and the environment. In the case of infractions of an administrative nature, the most numerous (26,086, 22% of the total) were related to non-compliance with regulations on waste and discharge. In terms of criminal infractions, the most numerous related to electricity fraud (586, 23% of the total), mistreatment or abandonment of domestic animals (476, 19% of the total), and forest fires (293, 12% of the total).

As a consequence of the interventions of the Guardia Civil in relation to the environment, in 2015 there were 374 arrests, which was a 22% decrease from the number of arrests made in 2014.

Number of environmental infractions registered by the Guardia Civil



Source: Prepared by the authors using data from SEPRONA

Definition of the Indicator:

The indicator provides information on the activity level of the Prosecutor and the Guardia Civil on questions related to the environment.

In the case of the activity of the Prosecutor, the indicator refers to the number of proceedings initiated in a specific year in relation to environmental issues, and the number of judgements delivered in the same area.

In the case of the activity of the Guardia Civil, the indicator refers to the number of environmental infractions, whether administrative or criminal, registered by SEPRONA and other units of this public security force.

Methodological Notes:

- The evolution of criminal activity and judicial proceedings in a specific area cannot be determined solely on the basis of statistics from the Prosecutor's Office, but these must be completed and interpreted alongside those from other judicial or police authorities, with each reflecting activity in their respective area. However, the fact that each of these authorities applies its own criteria when it comes to obtaining and standardising their information makes it impossible to merely collate the data provided by each of these independently on an aggregate basis.
- To calculate the indicator, in this edition, the information has been provided by the Coordinating Prosecutor's Office for the Environment and Urban Planning in the Report of the General State Prosecutor's Office, published in 2015, which collates the activity of the Prosecution the previous year. The annual reports of the General State Prosecutor's Office compile the data for regional Prosecutors' Offices based on the information provided by the seventeen Prosecutors of the autonomous communities and the fifty Provincial Prosecutors.
- The number of judgements recorded in the annual reports of the General Prosecutor's Office and therefore in this publication must, nonetheless, be taken as a minimum or indicative number, given that the system for acquiring data from prosecutors, with an IT base, does not allow us to establish the total number of judgements delivered in a specific area with certainty, as there may be judgements outside the statistics.
- The indicator also takes into account the infractions (crimes and offences) of both a criminal and administrative nature, registered by SEPRONA and other units of the Guardia Civil covering environmental issues.

Source:

- General State Prosecutor. Annual Report 2015.
- Ministry of Home Affairs, 2015. Citizen Information Office of the Guardia Civil. Directorate General of the Guardia Civil.
- Ministry of Home Affairs, 2015. Nature Protection Service (SEPRONA). Directorate General of the Guardia Civil.

Recommended Websites:

- https://www.fiscal.es/fiscal/publico/ciudadano/fiscal_especialista/medio_ambiente
- http://www.magrama.gob.es/es/actuaciones-seprona/default.aspx
- http://www.guardiacivil.es/es/servicios/atencionciudadano_1/

2.7 COASTS AND MARINE ENVIRONMENT

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 area of the seas of Europe is greater than the land surface and is home to a rich, vulnerable 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.

Spain possesses a coastline of just over 10,000 kilometres in length, with a rich and varied natural coastal and maritime heritage that requires a great efforts to conserve and protect it. This coast is home to important tourism and fishing industries and offers a strategic connection between land and sea.

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

The priority courses of action in relation to Coasts are today directed by:

- The protection and conservation of the integrity of the Public Maritime-Terrestrial Domain (DPMT, as per the Spanish acronym) 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 incidence of regulations regarding the Public Maritime-Terrestrial Domain of a country where sun and sea tourism represents 13% of GDP is fundamental to understanding the much-needed compatibility of coastal protection and economic activity, primarily in the tourism sector. The fact that over 6,700 authorisations for occupation and use of the DPMT were processed in 2015 is a reflection of this. Another of the measures adopted was the publication on the website of the Ministry of Agriculture and Fisheries, Food and Environment, in July 2015, of the demarcation line of the Public Maritime-Terrestrial Domain and the private lands affected by the protection zone easement, which provides free information for citizens.

In relation to actions for coastal protection, in 2015, the preparation and processing of the strategic environmental assessments of the Strategy for the Adaptation of the Coast to Climate Change as provided for in Law 2/2013 of 29 May, was completed. This is the first time a state law has envisaged a tool aimed at the purpose of analysing and adopting measures aimed at adapting our coast to the effects of climate change. Similarly, specific territorial strategies have been approved for the south coast of Castellón and the Valencia Sur coastline.

In relation to the protection of the marine environment, the marine strategies have been completed in all their phases, after the conclusion, in 2015, of the proposal for the programme of measures. 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 Europe overall.

In 2015, Spain continued to work intensely to advance towards the international commitment to protect 10% of the marine surface area. In this respect, on 23 December 2015, the Official Journal of the European Union published the updated bio-geographical lists of the Sites of Community Importance (SCIs) of the European Union, including 9 of the SCIs proposed for Spain the previous year: Western system of underwater canyons of the Gulf of León, the Minorca Channel, Mud volcanoes of the Gulf of Cádiz, the Banco de Galicia mountain, Avilés canyon system, South Almería-Seco de los Olivos, the Alborán Marine Space, the Marine Space of the Columbretes Islands and the Banco de la Concepción mountain. These sites represent an increase of over 3 million protected hectares, in areas under Spanish jusidiction.

In March 2015, Order AAA/368/2015, of 24 February, was published in the Official State Gazette, approving the proposal for its inclusion on the Natura 2000 list of Sites of Community Importance, of the ESZZ15002 marine space to the east and south of Lanzarote-Fuerteventura. This tenth site will join the nine previously listed sites already included on the European list at the end of 2016. Finally, we must highlight 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.

In respect of the protection of the marine environment and the coast against episodes of accidental marine pollution, in 2015 the State Plan for the Protection of the Sea Shore against Pollution (Ribera Plan) saw its resources strengthened with the establishment of two new bases with material resources and staff trained to act in response to an episode of pollution. Thus, two new bases, in Mallorca and Gran Canaria, have been added to the existing bases in Pontevedra, Tarragona and Jerez de la Frontera.

Litter on beaches, an indicator in the marine strategies framework

- 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.
- In the proposal of programmes of measures, for which public consultation began on 23 December 2015, multiple measures for the improvement of the status of the marine environment have been planned, including the problematic issue of marine litter.

- 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.
- Marine Strategies are living documents and all their contents should be updated at least every six years.

Spanish Network of Marine Protected Areas (RAMPE)

- RAMPE, as per the Spanish acronym, will consist of a consistent and well-managed network of protected marine spaces in Spanish waters in order to ensure protection, conservation and recovery of the natural heritage and marine biodiversity of Spain.
- The RAMPE will be made up of protected spaces located in the Spanish marine environment, representing the natural marine heritage, regardless of whether the management and declaration thereof are regulated pursuant to international, community and state legislation. Similarly, it will also be possible to include those spaces in the Network whose management and declarations are regulated pursuant to regional rules in accordance with the provisions set forth in article 36.1 of Law 42/2007, of 13 December, on Natural Heritage and Biodiversity.

Spanish Inventory of Marine Habitats and Species (IEHEM)

- The IEHEM, as per the Spanish acronym, 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 set out in Law 42/2007, of 13 December, implemented by R.D. 556/2011, of 20 April.

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

Demarcated Coastline

- In 2015, the 95.68% of the total length of the Spanish coast was demarcated.

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

Quality of Coastal Bathing Water

- Marine bathing areas showed an excellent level of quality at 89% of sampling points, a percentage similar to previous years.
- The 2015 coastal bathing season was the shortest in the last 10 years, with an average duration of just 119 days. 2009, with 142 days, had the longest bathing season since 2006.
- As occurred in 2014, only eight Member States with coastlines recorded percentages of "excellent" water quality superior to those of Spain.

Litter on Beaches, an Indicator in the Marine Strategies Framework

Distribution of beaches in the monitoring programme of marine litter Year 2014

Marine Demarcation	Number of Beaches
North Atlantic	9
South Atlantic	3
Strait of Gibraltar and Alborán Sea	3
Levante and Balearic Islands	9
Canary Islands	2

Source: MAGRAMA

- *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*
- *In the proposal of programmes of measures, for which public consultation began on 23 December 2015, multiple measures for the improvement of the status of the marine environment have been planned, including the problematic issue of marine litter*
- *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*
- *Marine Strategies are living documents and all their contents should be updated at least every six years*

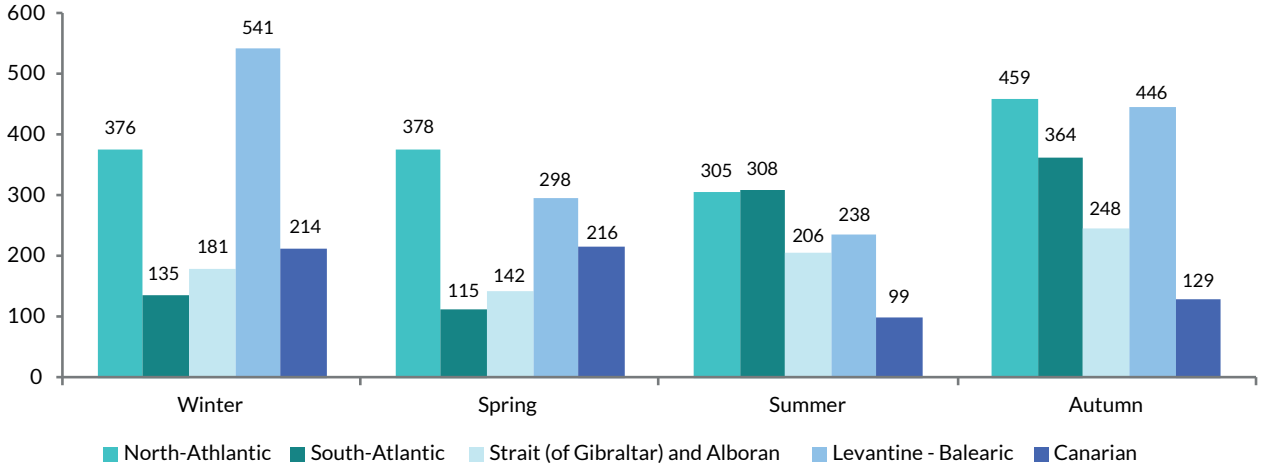
Among the marine strategies' monitoring programmes there is, among others, an indicator relating to **litter on beaches**. This indicator was used as a descriptor of the good environmental status (D10), to evaluate the state of the marine environment in the previous phase of the strategy and is obtained 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, it also created 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.

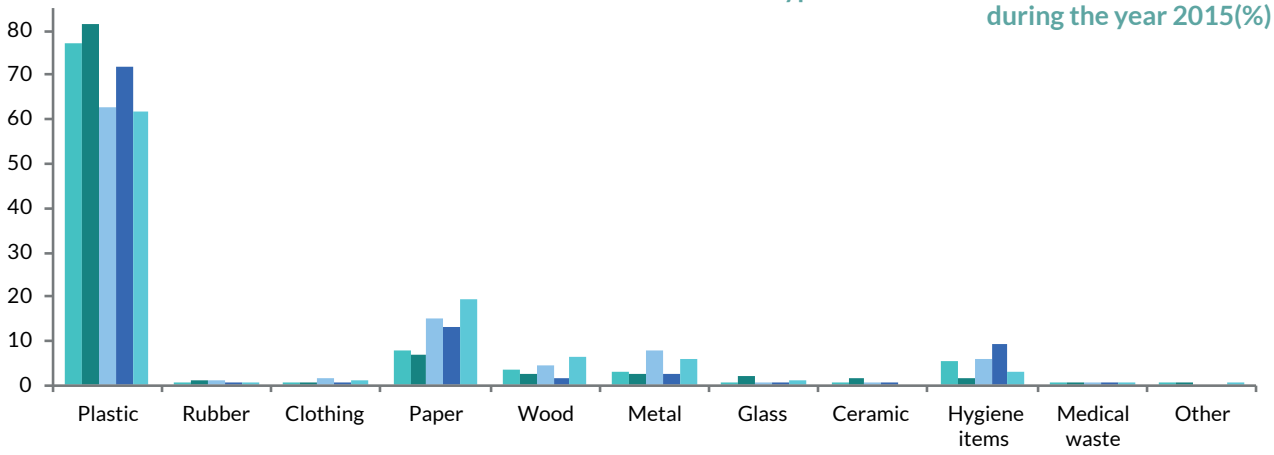
The statistical analysis of the data collected during the first two years of the programme's development provided a relevant view of the densities of accumulation of marine litter on the beaches along the entire Spanish coast. Results for the year 2015 are shown in the charts below:

Average No. of objects found during each inspection campaign Year 2015



Source: MAGRAMA

Distribution of the type of marine litter in 100 metre transect during the year 2015(%)



Source: MAGRAMA

	Plastic	Rubber	Clothing	Paper	Wood	Metal	Glass	Ceramic	Hygiene items	Medical waste	Other
North-Athlantic	77.0	0.5	0.6	8.1	3.7	2.8	0.8	0.4	5.7	0.3	0.1
South-Atlantic	81.3	1.0	0.5	6.9	2.5	2.7	1.9	1.6	1.4	0.1	0.1
Strait (of Gibraltar) and Alboran	62.6	1.2	1.5	15.1	4.5	7.8	0.7	0.1	6.2	0.2	0.0
Levantine - Balearic	71.8	0.6	0.3	13.0	1.6	2.4	0.5	0.3	9.3	0.3	0.0
Canarian	61.8	0.3	1.1	19.2	6.6	6.2	1.2	0.0	3.0	0.1	0.3

Source: MAGRAMA

Participation of the Marine Strategies' Monitoring Committees in the design of the programmes of measures

In 2015, the five Marine Strategies' Monitoring Committees met. These committees are collegiate bodies constituting the principal tool of cooperation with the autonomous communities. All of these include members from the coastal autonomous communities of each demarcation as well as members of the General State Administration. At the meetings which took place in October 2015, the proposed programmes of measures were discussed, **ahead of the public consultation process**.

The contribution of the Monitoring Committees to the design process of the programmes of measures was very notable. As a result of the discussions, the autonomous administrations proposed new measures and redesigned others to adapt them to the realities of each stretch of coastline. Of the total 95 new measures proposed in the document, the autonomous communities appeared in 34 as the responsible authority. In many such cases, sharing responsibility with other authorities of the General State Administration.

Preparation of the second cycle of marine strategies.

At European level, preparatory work began on the second cycle of marine strategies. Within this process, the discussions regarding the review of the decision of the Commission on criteria and methodological standards on good environmental status of marine waters (Decision 2010/477/EU) should be highlighted.. This review is intended to compile a compendium of criteria and methodological standards that is clearer, more concise and self-explanatory and that facilitates coordination and coherence between Member States when it comes to good environmental status (GES) and proceeds to assess whether or not said GES has been met.

A new decision, overturning the existing one in force, is expected to be approved. This decision shall regulate technical and practical aspects of the second phase of marine strategies.

Spain has actively participated in the technical discussions and in multiple expert workshops organised throughout 2015.

The marine strategies and programmes of measures

In 2015 the fifth phase, and final milestone, of the marine strategies was reached: the proposals for the programmes of measures. For that, MAGRAMA carried out an inventory of the existing measures from different political areas that could have positive repercussions on the marine environment. This inventory served as the basis for the detection of shortcomings. It is proposed to cover these shortcomings with a set of 95 new measures, the majority related to biodiversity and marine litter.

95 new measures proposed in the Programmes of Measures for Spanish marine strategies		
Biodiversity (D1, D4, D6)	**26.3 %**	**52.6 %**
Marine litter (D10)	**26.3 %**	
Marine Protected Areas	**12.6 %**	**47.4 %**
Non-native species (D2)	**3.2 %**	
Commercially exploited species (D3)	**9.5 %**	
Eutrophication, Pollutants and their effects, Pollutants in fish products (D5, D8, D9)	**9.5 %**	
Hydrological Alterations (D7)	**1.0 %**	
Underwater noise (D11)	**1.0 %**	
Horizontal measures	**10.6 %**	

New measures proposed in the Programmes of Measures (subject to modifications after public consultation)

Moreover, MAGRAMA carried out 5 expert workshops (biodiversity, marine litter, marine turtles, elasmobranchii) and the experts' proposals were incorporated into discussions on measures with the various competent authorities.

The public consultation for the programmes of measures began on 23 December 2015. The final documents can be consulted on the MAGRAMA website.

Source:

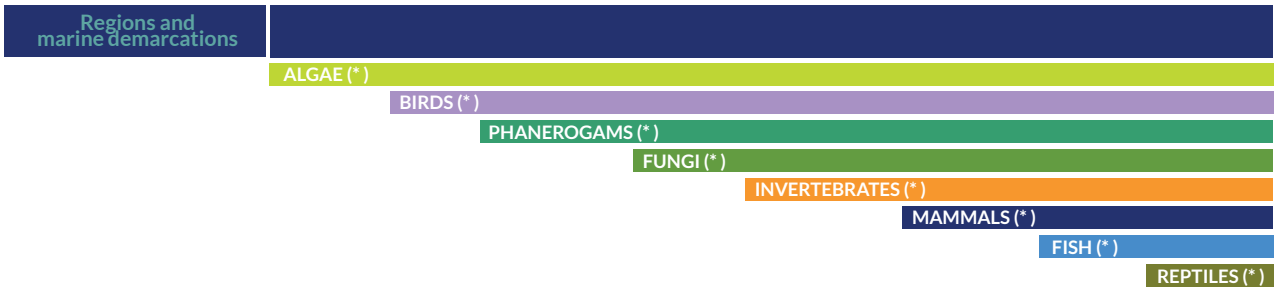
Ministry of Agriculture, Food and the Environment, 2016. Information supplied by the Directorate General for Coastal and Marine Sustainability

Recommended Websites:

- http://www.magrama.gob.es/es/costas/temas/estrategias-marinas/default.aspx
- http://www.magrama.gob.es/es/costas/temas/proteccion-del-medio-marino/actividades-humanas-en-mar/basuras-marinas/default.aspx
- http://ec.europa.eu/environment/marine/index_en.htm

Spanish Inventory of Marine Habitats and Species (IEHEM)

IEEM. No. of taxa identified



Regions and marine demarcations	Algae (*)	Birds (*)	Phanerogams (*)	Fungi (*)	Invertebrates (*)	Mammals (*)	Fish (*)	Reptiles (*)
Atlantic North-East R.	571 (51)	58 (50)	12 (7)	0 (0)	1547 (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)
Canary Islands 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)	2469 (126)	70 (59)	566 (76)	11 (10)
Strait of Gibraltar and Alborán Marine Demarcation	438 (64)	58 (51)	12 (6)	4 (0)	1996 (124)	69 (59)	439 (74)	11 (10)
Levante-Balearic Islands Marine Demarcation	720 (65)	55 (52)	10 (6)	0 (0)	1904 (120)	68 (59)	555 (76)	11 (10)

(*) Species with some level of protection.
Source: Directorate General for Coastal and Marine Sustainability. MAGRAMA.
Records processed as of 27/02/2015

- *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 set out in Law 42/2007, of 13 December, implemented 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*

The Spanish Inventory of Marine Habitats and Species (IEHEM, as per the Spanish acronym) consists of two elements, one relating to species, the other to habitats.

Spanish Inventory of Marine Species (IEEM, as per the Spanish acronym).

Throughout 2015, MAGRAMA have prepared a master list of marine species with more than 11,100 species, indicating the presence of each in the marine demarcations, thanks to the collaboration of a group of national experts.

This list is time-stamped, taking into account possible future changes in the taxonomy. In late 2015, the Committee of the Spanish Inventory of Natural Heritage and Biodiversity approved this and it is awaiting publication by Resolution of the Directorate General for Coastal and Marine Sustainability in the Official State Gazette at some stage in 2016.

Spanish Inventory of Marine Habitats (IEHM, as per the Spanish acronym).

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 includes the 886 identified marine habitats and their hierarchical classification published by virtue of 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."

IEHM. Marine habitats present in Spanish waters

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

Marine taxa are sorted by groups identified up to February 2015 within the framework of the Spanish Inventory of Marine Species.

The information on this map shows the cartographic information of marine habitats at a municipal level, within the framework of the Spanish Inventory of Marine Habitats.

Definition of the Indicator:

The indicator expresses the number of marine species identified by regions and demarcations, along with the number of marine habitats present in Spanish water.

Notes:

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:

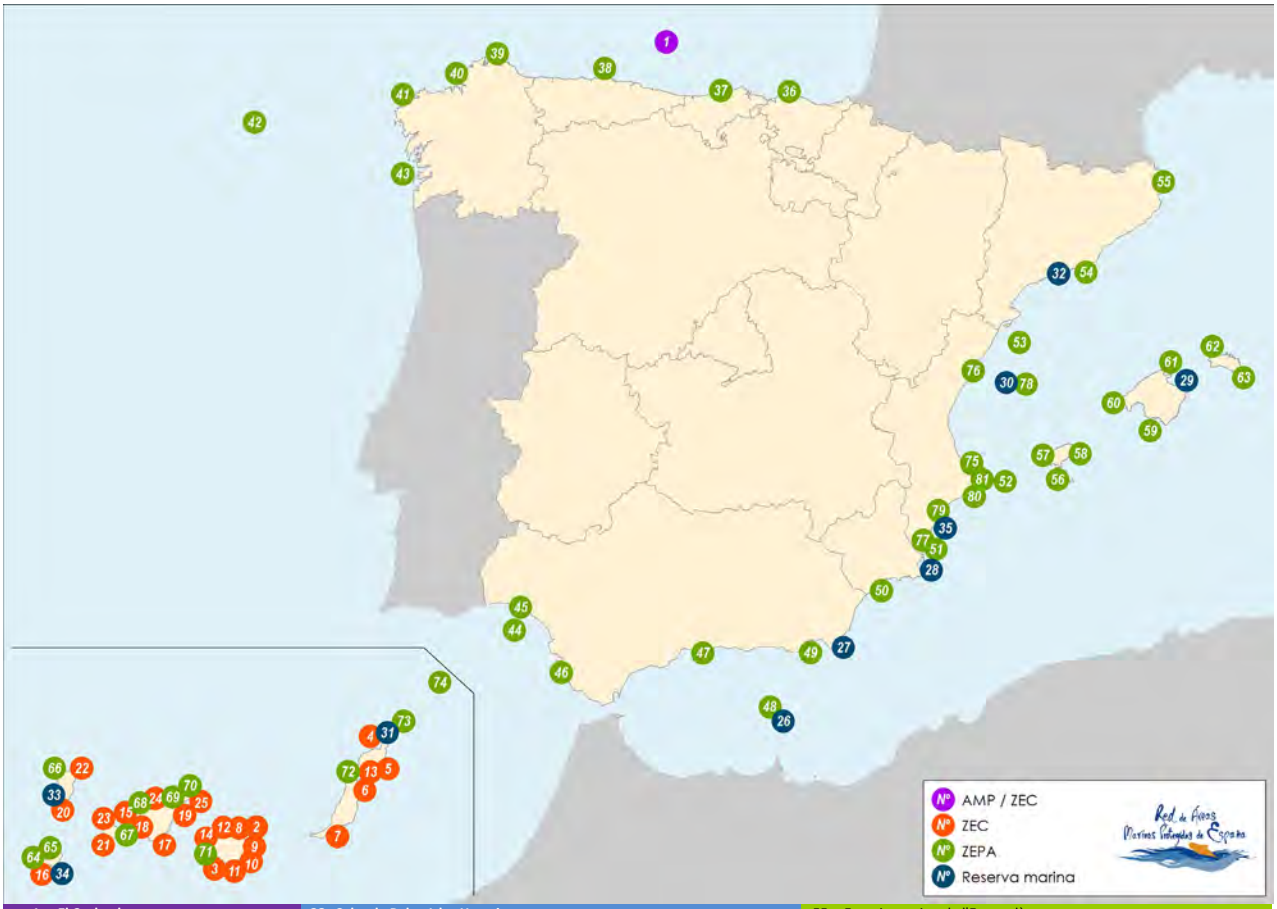
Ministry of Agriculture, Food and the Environment, 2016. Information supplied by the Directorate General for Coastal and Marine Sustainability

Recommended Websites:

- http://www.magrama.gob.es/es/costas/temas/biodiversidad-marina/habitats-especies-marinos/inventario-espanol/inventario-habitats-especies.aspx

Spanish Network of Marine Protected Areas (RAMPE)

Spanish Network of Marine Protected Areas (RAMPE)
Year 2015



1	El Cachucho	28	Cabo de Palos-Islas Hormigas	55	Espacio marino de l'Empordà
2	Área marina de la Isleta	29	Cala Ratjada-Levante de Mallorca	56	Espacio marino de Formentera y del sur de Ibiza
3	Franja marina de Mogán	30	Islas Columbretes	57	Espacio marino del poniente y norte de Ibiza
4	Sebadales de La Graciosa	31	Isla de la Graciosa e Islotes del Norte de Lanzarote	58	Espacio marino del levante de Ibiza
5	Sebadales de Guasimeta	32	Reserva marina de Masía Blanca	59	Espacio marino del sur de Mallorca y Cabrera
6	Sebadales de Corralejo	33	Isla de La Palma	60	Espacio marino del poniente de Mallorca
7	Playas de sotavento de Jandía	34	La Restinga-Mar de las Calmas	61	Espacio marino del norte de Mallorca
8	Bahía del Confital	35	Isla de Tabarca	62	Espacio marino del norte y oeste de Menorca
9	Bahía de Gando	36	Espacio marino de la Ría de Mundaka-Cabo de Ogoño	63	Espacio marino del sureste de Menorca
10	Playa del Cabrón	37	Espacio marino de los Islotes de Portios-Isla Conejera-Isla de Mouro	64	Espacio marino de la zona occidental de El Hierro
11	Sebadales de Playa del Inglés	38	Espacio marino de Cabo Peñas	65	Espacio marino de los Roques de Salmor
12	Costa de Sardina del Norte	39	Espacio marino de Punta de Candelaria-Ría de Ortigueira-Estaca de Bares	66	Espacio marino del norte de La Palma
13	Cagafrecho	40	Espacio marino de la Costa de Ferrolterra-Valdoviño	67	Espacio marino de La Gomera-Teno
14	Sebadales de Güigüí	41	Espacio marino de la Costa da Morte	68	Espacio marino de los Acantilados de Santo Domingo y Roque de G
15	Franja marina Teno-Rasca	42	ZEPA Banco de Galicia	69	Espacio marino del Roque de la Playa
16	Mar de Las Calmas	43	Espacio marino de las Rías Baixas de Galicia	70	Espacio marino de Anaga
17	Sebadales del Sur de Tenerife	44	Golfo de Cádiz	71	Espacio marino de Mogán-La Aldea
18	Cueva marina de San Juan	45	Espacio marino del Tinto y del Odiel	72	Espacio marino de La Bocayna
19	Sebadal de San Andrés	46	Espacio marino de la Bahía de Cádiz	73	Espacio marino de los Islotes de Lanzarote
20	Franja marina de Fuencaliente	47	Bahía de Málaga-Cerro Gordo	74	ZEPA Banco de la Concepción
21	Franja marina Santiago-Valle Gran	48	Espacio marino de la Isla de Alborán	75	L'Almadrava
22	Costa de Garafía	49	Bahía de Almería	76	Espacio marino de Orpesa i Benicàssim
23	Costa de Los Órganos	50	Espacio marino de los Islotes Litorales de Murcia y Almería	77	Espacio Marino de Cabo Roig
24	Costa de San Juan de la Rambla	51	Espacio marino de Tabarca-Cabo de Palos	78	Espacio marino del entorno de Illes Columbretes
25	Sebadales de Antequera	52	Plataforma-talud marinos del Cabo de la Nao	79	Espacio marino de Tabarca
26	Isla de Alborán	53	Espacio marino del Delta de l'Ebre-Illes Columbretes	80	ZEPA Espacio marino de Ifac
27	Cabo de Gata-Níjar	54	Espacio marino del Baix Llobregat-Garraf	81	Espacio marino de la Marina Alta

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

- *RAMPE will consist of 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 will be made up of protected spaces located in the Spanish marine environment, representing the natural marine heritage, regardless of whether the management and declaration thereof are regulated pursuant to international, community and state legislation. Similarly, it will also be possible to include those spaces in the Network whose management and declarations are regulated pursuant to regional rules in accordance with the provisions set forth in article 36.1 of Law 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, as per the Spanish acronym).

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

In November 2015, 46 new spaces were added to the Network: 39 Specially Protected Areas for Birds which were declared in 2014 (Order AAA/1260/2014, of 9 July, declaring Specially Protected Areas for Birds in Spanish marine waters), along with another 7 SPABs previously declared by the C. Valenciana Government, which are now state competency.

The need to prepare a Master Plan for RAMPE is established in Law 41/2010 (Article 29). The Master Plan shall be the basic instrument of coordination for achieving the objectives of 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. The Plan is expected to be approved and published by late 2017.

Definition of the Indicator:

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

Source:

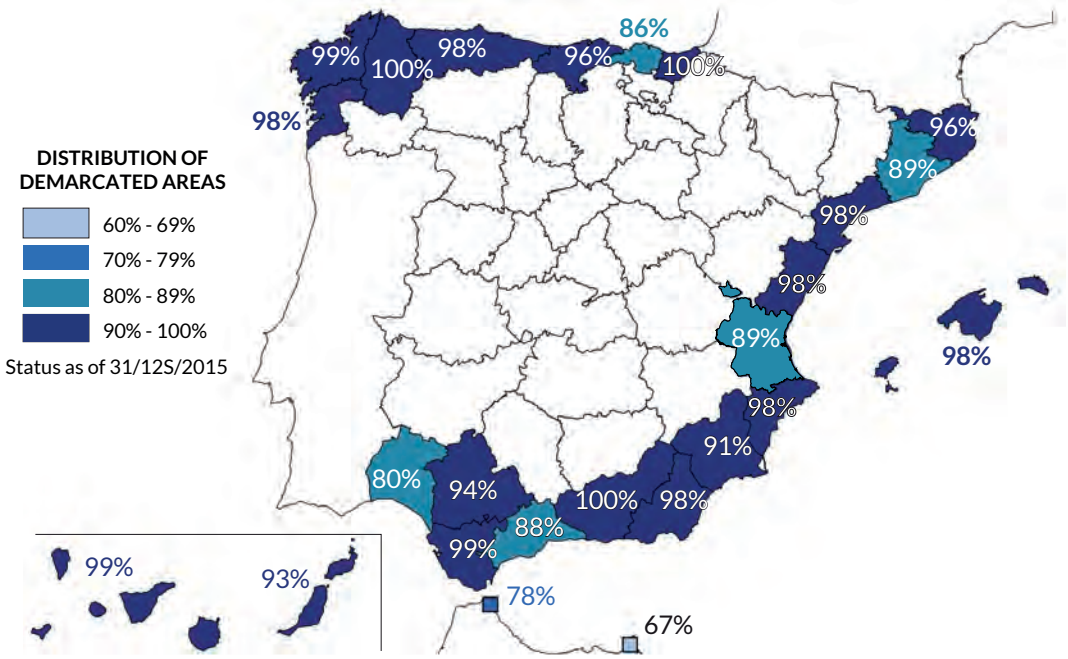
Ministry of Agriculture, Food and the Environment, 2016. Information supplied by the Directorate General for Coastal and Marine Sustainability.

Recommended Websites:

- http://www.magrama.gob.es/es/costas/temas/biodiversidad-marina/espacios-marinos-protegidos/red-arreas-marinas/red-rampe-index.aspx

Demarcated Coastline

Percentage of demarcated coast length. Year 2015



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

- *In 2015, the 95.68% of the total length of the Spanish coast was demarcated*
- *Demarcation is the instrument established to determine the Public Maritime-Terrestrial Domain and is implemented by the General State Administration*

In 2014 Royal Decree 876/2014 of 10 October was passed approving the General Regulation of Coastal Areas. The new regulation introduces modifications with the objective, among others, of providing demarcation with greater legal security, establishing technical criteria to demarcate the Public Maritime-Terrestrial Domain and establishing greater guarantees for citizens, both during processing as well as after it has been completed.

During 2015, 46,663 metres of new demarcation were approved, making 95.68% of the Spanish coast demarcated. The main objective was to continue to process the files for the stretches of coast line that remain undefined and to analyse those which ought to be subject to review, in the scope of the new regulation.

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 Land Registry.

This coordination will guarantee legal security with which stakeholders, both public and private, can rely on 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 and Fisheries, Food and Environment carries out the **Demarcation Plan**, processing and approving the files that define the **demarcation line of the Public Maritime-Terrestrial Domain**. In July 2015, the Ministry of Agriculture and Fisheries, Food and Environment published the Public Maritime-Terrestrial Domain demarcation line on its website along with the private lands affected by the protection zone easement. 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.

Definition of the Indicator:

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

Source:

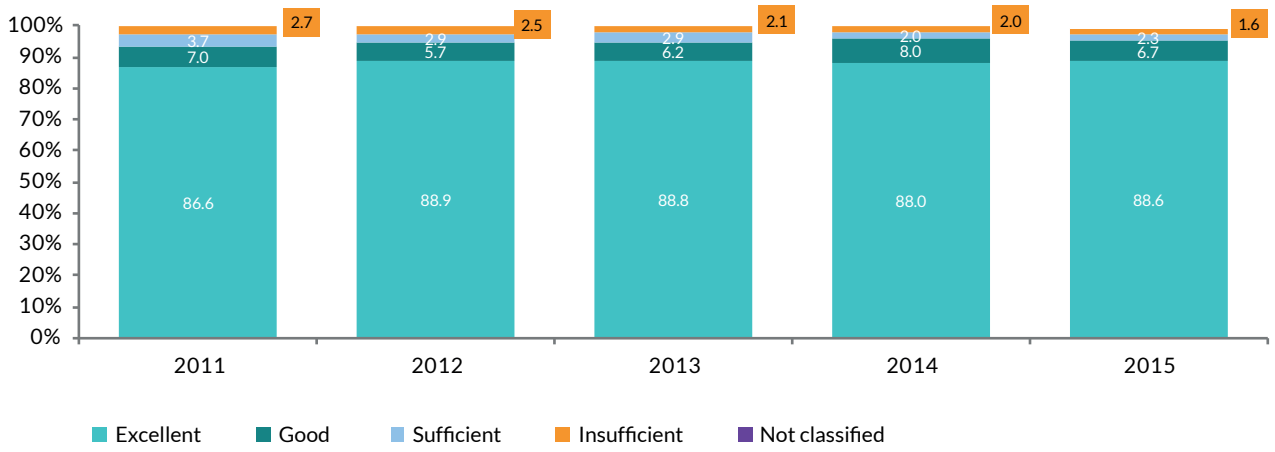
Ministry of Agriculture, Food and the Environment, 2016. Information supplied by the Directorate General for Coastal and Marine Sustainability

Recommended Websites:

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

Quality of Coastal Bathing Water

Quality of Coastal Bathing Water
Percentage of sampling points classified by quality categories



Source: MSSSI

- *Marine bathing areas showed an excellent level of quality at 89% of sampling points, a percentage similar to previous years*
- *The 2015 coastal bathing season was the shortest in the last 10 years, with an average duration of just 119 days. 2009, with 142 days, had the longest bathing season since 2006*
- *As occurred in 2014, only eight Member States with coastlines recorded percentages of "excellent" water quality superior to those of Spain*

For the purposes of informing the sanitary and environmental authorities and, above all, the general public, every year the Ministry of Health, Social Services and Equality prepares a report on the quality of Spanish bathing waters. The most recent of these is the 2015 report which classifies bathing waters into four categories defined in the current legislation. This report is prepared every year upon the conclusion of the bathing season and is the basis of the Spanish contribution, which the EU Commission uses to prepare the European report.

The 2015 analysis shows that 88.6% of sampling points were classified as "Excellent" while 6.7% were classified in the "Good" category. The percentage of sampling points with "sufficient" quality represented 2.3% and the percentage of sampling points of "insufficient" quality was 1.6%. It must also be noted that the category "unclassified" reached 0.9% in 2015, corresponding to sampling points where the minimum number of samples required by national legislation was not met.

Therefore, in 2015 the level of quality of maritime bathing waters was similar to previous years: with the same percentage for the Excellent category as in 2013, an increase of one percentage point on 2014, at the cost of a similar decrease in the Good category. The categories sufficient and insufficient remained stable, with almost identical values to previous years.

At the end of the 2015 bathing season, a series of data for five consecutive years on the quality of bathing water was made available, based on the application of Royal Decree 1341/2007, of 11 October, on the management of bathing water quality. By virtue of that established in Article 4, 12 maritime bathing areas were detected where the competent authority must regulate their use as a bathing area (recommending they are not used for bathing or permanently prohibiting bathing there).

As in the previous year, only in five autonomous communities were there any sample points detected that were deemed "insufficient." On the other hand, the percentage of sample points deemed "Excellent" in Catalonia, Ceuta, C. Valenciana, Murcia, the Canary Islands and Andalusia was in excess of 90%.

Quality of coastal bathing water. Year 2015
No. of sampling points classified by quality categories

Excellent	Good	Sufficient	Poor	Unclassified
1726	130	44	31	17

Source: MSSSI

The duration of the bathing season varies between autonomous communities. 2015 was the shortest since 2006, with an average duration of just 119 days. The longest was 2009, at 142 days. The longest in 2015 was 274 days in the Canary Islands and the shortest 29 days in the Melilla.

In the EU, 97.1% of the sample points in 2015 complied with the minimum quality requirements established by the Directive on bathing water, a percentage similar to that of 2014 which was 96.8%. Continuing with this year-on-year comparison, 85.8% of sampling points were classified as “Excellent”, compared to 85.5 in 2014 Coastal bathing water sampling points classified as “insufficient” amounted to 1.6% in 2015, down from 1.7% in 2014.

Between 2014 and 2015 in the EU, 125 bathing areas were upgraded from "insufficient" (poor quality in the 2015 European Bathing Water Quality Report) to "sufficient" or better. Countries with the greatest number of improvements were France (32 sites), Italy (24 sites) and Spain (20 sites). However, for the same period, 76 bathing areas were downgraded to "insufficient." This downgrading was most acute in France (29 bathing areas, 12 in the Brittany region). Spain, Italy and the Netherlands also saw over 10 areas downgraded to insufficient.

In 2015, the 23 Member States of the EU with access to the sea produced a report on 14,791 coastal bathing areas. Over 60% of these are located on the Mediterranean coasts, a percentage far above other coastal regions: The North-East Atlantic Ocean (25%), the Baltic Sea (8%) and the Black Sea (1%). The other bathing areas can be found in the Canary Islands, Madeira, the Azores, Martinique and French Guiana in the Atlantic and Indian Oceans.

Spain accounted for 13% of coastal bathing areas in the EU in 2015. This percentage was only exceeded by France (13.9%) and Italy (32.7%). In terms of water quality levels, only eight Member States showed a higher percentage of waters classified as "excellent" than Spain.

Definition of the Indicator:

The indicator presents the percentage of the total sample points included annually in each of the quality ranges established by legislation, of which there have been four since 2011: "Poor" quality, "Sufficient" quality, "Good" quality and "Excellent" quality. From 2015, "unclassified" sampling points were included.

Notes:

- Directive 2006/7/EC governs management of bathing water quality 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 having: “Insufficient” quality waters; “Sufficient” quality waters, “Good” quality waters and “Excellent” quality waters.
- In Spain, in the year 2015, 1,912 areas of bathing water were included. Of them, 227 were continental and 1,685 were marine. Of the 2,189 sample points taken during the 2014 season, 241 were from continental waters and 1,948 from marine waters.
- In terms of sampling points not included in the 2015 census, Murcia communicated the removal of 1 sampling point and Asturias communicated the removal of 4 sampling points from marine waters.
- For the 2015 season, there was 1 sp/ba (sampling point per bathing area) for 89.5% of cases and 2sp/ba for 7.8% of bathing areas. The highest for a single bathing area was 8 sp/ba at Playa Matalascañas, Huelva, and the national average was 1.2 sp/ba for maritime waters. The average number of bathing areas per municipality was 4.9 ba/municipality with a maximum of 29 bathing areas in Cartagena (Murcia). For Mediterranean bathing areas the average was 3.7 ba/municipality, while on the Atlantic and Cantabrian coast the average was 5.2 ba/municipality.
- The annual classification of sampling points was based on data from the three previous seasons and therefore, in 2015 data from 2012, 2013 and 2014 were used.

Source:

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

Recommended Websites:

- http://www.msssi.gob.es/profesionales/saludPublica/saludAmbLaboral/calidadAguas/aguasBanno/publicaciones.htm
- http://www.eea.europa.eu//publications/european-bathing-water-quality-2015
- http://nayade.msc.es/Splayas/home.html

2.8 GREEN ECONOMY

Once the strategy of the European Union for growth and employment "Europe 2020" (adopted in 2010) reached the midpoint of its validity term in December 2015, the Commission issued the Communication "Closing the loop - An EU action plan for the Circular Economy" (COM(2015) 614 final), to serve as the guideline document for the transition towards a circular economy. The appropriate regulatory framework for its development requires a commitment within all fields and includes the participation of economic agents, society and policy makers. Specific actions of the plan and the regulatory measures on waste it sets out include long-term targets for the reduction of landfill deposits and increased preparation for re-use and recycling of key waste flows, such as municipal waste and packaging waste.

Efforts towards a sustainable, low-carbon, resource efficient and competitive economy will help transform our economy while providing competitive and sustainable advantages. Proposed actions will contribute to "closing the loop" of the products' life cycles by increasing reuse and recycling, bringing benefits to the environment and to the economy. Therefore, it encompasses the entire life cycle: production (improvements in the design and process efficiency), consumption (education in consumption patterns), waste management and the secondary raw materials market in order to make more waste into new resources.

Moreover, the plan identifies a number of priority areas with specific challenges, such as plastics, food waste, critical raw materials (such as those present in electronic devices), construction and demolition waste and biomaterials and bioproducts.

This transition towards a circular economy will boost competitiveness, promote sustainable economic growth and create new jobs. In order to do so, it must face a systemic change that requires a driving of innovation.

The follow-up of the development of the actions adopted towards a circular economy is to be carried out by means of an indicator system based on the information available. To achieve such a goal, the Commission will be assisted by the European Environmental Agency (AEMA, as per the Spanish acronym) and member states.

In Spain, the Spanish Group for Green Growth, an initiative created in 2014 and coordinated by the the Ministry of Agriculture and Fisheries, Food and Environment, comes together under the supervision of the Administration, with around forty companies involved in the fight against climate change and the path towards a low-carbon economy.

The group is part of the Green Growth Group created in the European Union in 2013 with the purpose of debating about the green economy and low-carbon policies. Companies joining this group have undertaken to reduce greenhouse gases by at least 40% on 1990 levels, increase the contribution of renewable energies up to 27% of the final energy consumed in Europe and try to implement improvements in energy efficiency.

Energy intensity of the economy

- The energy intensity of the Spanish economy is lower than that of the EU-28, although both have fallen over recent years.
- In Spain, between 2005 and 2014, the decrease of energy intensity amounted to 20.2%, higher than the 18.4% reduction corresponding to the EU-28.
- In 2014, Spain ranked seventh in the list of European countries with the lowest energy intensity (9.7 kgoe/€1,000).

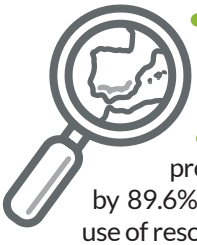
Organisations with Eco-Management and Audit Scheme

- In 2015 Spain had 959 organisations with EMAS certification.
- In 2014, Spain was the scheme's second highest EU-28 contributor after Germany, with 26.8% of the total organisations registered.
- Spain ranked second in regard to the number of organisations registered per inhabitant, with 21 organisations/million inhabitants.

Green jobs

- In 2009, green job estimations in Spain ranged between 320,000 and 530,000 employees.
- The estimation of green jobs only considering water supply, sanitation, waste management and decontamination activities for 2014 resulted in a total of 138,200 employed persons (0.65% of total employment figures).

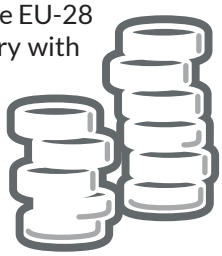
Total Material Requirement



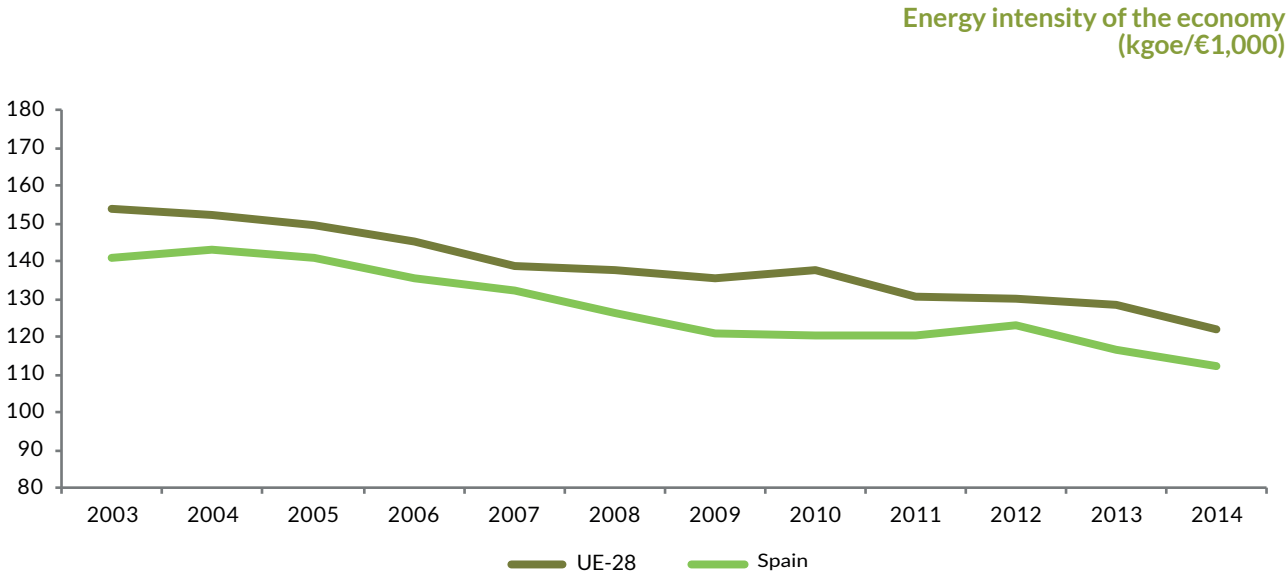
- Between 2008 and 2013, Spain reduced its material requirement (TMR) by 51.8%.
- During that same period, productivity of materials increased by 89.6%; there is a decoupling between use of resources and economic growth.
- In terms of consumption of materials per inhabitant, in 2014 Spain ranked penultimate within the EU-28.

Environmental taxes

- Between 2013 and 2014, environmental taxes decreased by 1.9%, a reduction similar to the trend experienced in previous years, which reverted exceptionally in 2013.
- In 2014, environmental taxes represented 1.85% of GDP, a percentage lower to that of 2013, but similar to that of 2005.
- Within the European framework, despite the fact that Spain contributed 5.6% of all environmental taxes in the EU-28 in 2014, it was the country with the third lowest ratio of environmental taxes to GDP.



Energy Intensity of the Economy



Source: Eurostat

- *The energy intensity of the Spanish economy is lower than that of the EU-28, although both have fallen over recent years*
- *In Spain, between 2005 and 2014, the decrease of energy intensity amounted to 20.2%, higher than the 18.4% reduction corresponding to the EU-28*
- *In 2014, Spain ranked seventh in the list of European countries with the lowest energy intensity (9.7 kgoe/€1,000)*

Over recent years, the energy intensity of the economy in Spain has been lower than that of the EU-28 average. Within a context of the reduction of these intensities, the difference between the two varies annually, ranging from (17.3 kgoe/€1,000) in 2010 and (6.8 kgoe/€1,000) in 2007. In 2014, Spain's energy intensity was lower than that of the EU-28 (9.7 kgoe/€1,000).

Between 2005 and 2014, the energy intensity of the economy decreased by 20.2% in Spain, whereas for the EU-28 the reduction was lower (18.4%). During those years, Spain was the seventh country in the EU-28 with the lowest energy intensity, after Denmark, Ireland, the United Kingdom, Luxembourg, Italy and Austria.

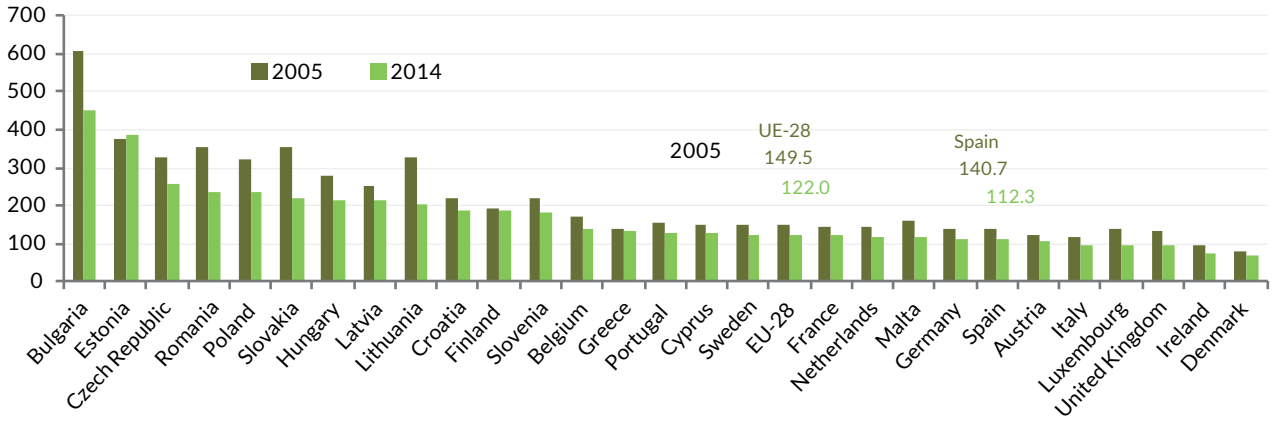
It must be taken into account that the decoupling of energy consumption from economic growth is an indicator of environmental improvement, since it may originate from the reduction in demand for energy services or from improved efficiency of use (or from a combination of both factors), where it occurs without a reduction in the level of economic development.

In the case of Spain, the year 2008 was the first in which a reduction in energy consumption occurred. In fact, in the period 2007-2014, primary energy decreased by 20.2%. This period occurred simultaneously with the commencement and development of the industrial and business slowdown due to the economic and finan-

cial crisis, which affected energy demand, both directly (as a result of the reduction in industrial production and the decrease in the consumption of energy resources) and indirectly (a reduction in the transportation demand, for example).

This decrease in energy consumption was accompanied by a slowdown in GDP growth, which led to a reduction between 2009 and 2013 (2014 was the first year with an increase in GDP). However, energy intensity decreased, which makes the decrease in energy consumption even more relevant.

Energy intensity of the economy (kgoe/€1,000)
Years 2005 and 2014



Source: Eurostat

Directive 2012/27/EU on energy efficiency establishes a common framework for the promotion of energy efficiency within the European Union, so as to meet the main target of achieving a 20% reduction in primary energy consumption by 2020. This directive has been transposed in Spain by Royal Decree 56/2016 of 12 February.

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:

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 referring back to 2005. This ratio is measured in kilograms of oil equivalent (kgoe) per 1,000 euros.

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

Source:

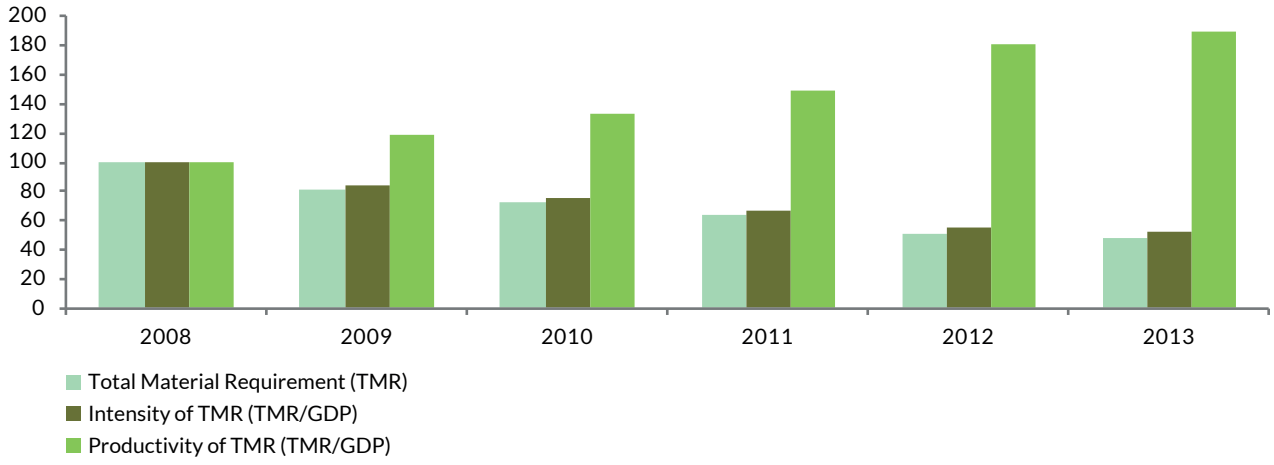
Eurostat. Information obtained from the website. Available on: Statistics/Tables by subject/Environment and Energy/Energy/ Energy Statistics- Main Indicators/ Energy intensity of the economy (tsdec360).

Recommended Websites:

- http://ec.europa.eu/eurostat/data/database
- http://www.eea.europa.eu/data-and-maps/indicators/total-primary-energy-intensity-2/assessment

Total Material Requirement

Total Material Requirement: total, intensity and productivity (Index 2008=100)



Source: INE

- ***Between 2008 and 2013, Spain reduced its material requirement (TMR) by 51.8%***
- ***During that same period, productivity of materials increased by 89.6%; there is a decoupling between use of resources and economic growth***
- ***In terms of consumption of materials per inhabitant, in 2014 Spain ranked penultimate within the EU-28***

Between 2008 and 2013, "Total Material Requirement (TMR)" in Spain decreased by 51.8%. However, in the last year this decrease amounted to 6.0% (lower than the 19.7% reduction between 2011 and 2012). The downward trend continues, which implies a lower pressure on the environment thanks to the decrease in the demand for resources.

During that same period, the domestic extraction of materials decreased by 52.4%, while the trade balance decreased by 49.3%. The components of this physical balance show uneven behaviour, with a decrease in imports by 18.0% and an increase in exports by 20.7%. The scenario for the period may be described as one in which the internal processes demanding resources (industrial activity) decreased as a consequence of the economic crisis. The materials with the greatest importance in the physical trade balance in 2013 were fossil fuels, both as regards imports (57.0%) and exports (28.7%), followed by biomass and metallic minerals.

On the other hand, productivity of materials (amount of GDP generated per TMR unit) increased by 89.6% during the relevant period (2008-2013). As in the case of TMR, in 2013 the increase was lower than that experienced the previous year (4.6% between 2012 and 2013 in comparison with 21.3% between 2011 and 2012).

It can therefore be observed that over recent years there has been a decoupling between the use of resources and economic growth.

The intensity of TMR (TMR/GDP) decreased similarly to TMR, although to a lesser extent (as expected, since it is an indicator affected by GDP); between 2008 and 2013 it decreased by 47.3%. Similarly, TMR intensity per inhabitant decreased by 52.4%, going from 17.7 t/inhab. in 2008 to 8.4 t/inhab. in 2013. In that regard, Spain is the second country in the EU-28 with the lowest material requirement per inhabitant. In 2014, the provisional estimations by Eurostat forecast a consumption of 8.32 t/inhab. in our country. Only Italy showed a lower consumption (8.28 t/inhab).

Total Material Requirement intensity (GDP and inhabitant) and productivity in Spain

	2008	2009	2010	2011	2012	2013
Total Material Requirement (1,000 tonnes)	815,825.3	664,916.1	590,764.5	520,929.9	418,253.1	393,357.6
Intensity of TMR by GDP (tonnes per million euros)	727.88	615.23	546.54	486.80	401.37	383.90
Intensity of TMR per capita (tonnes per inhabitant)	17.74	14.34	12.69	11.15	8.94	8.44
Productivity of materials PIB/CNM (euros/t)	1,373.85	1,625.41	1,829.69	2,054.22	2,491.47	2,604.86

Source: INE

This estimate for 2014 forecasts a consumption of 5.8% in Spain of all materials used in the EU-28.

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: TMR Productivity and TMR 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.
- TMR Productivity: relationship between GDP and Total Material Requirement.
- Intensity of TMR by GDP: relationship between Total Material Requirement and GDP.
- Intensity of TMR per capita: ratio between Total Material Requirement and population.

Source:

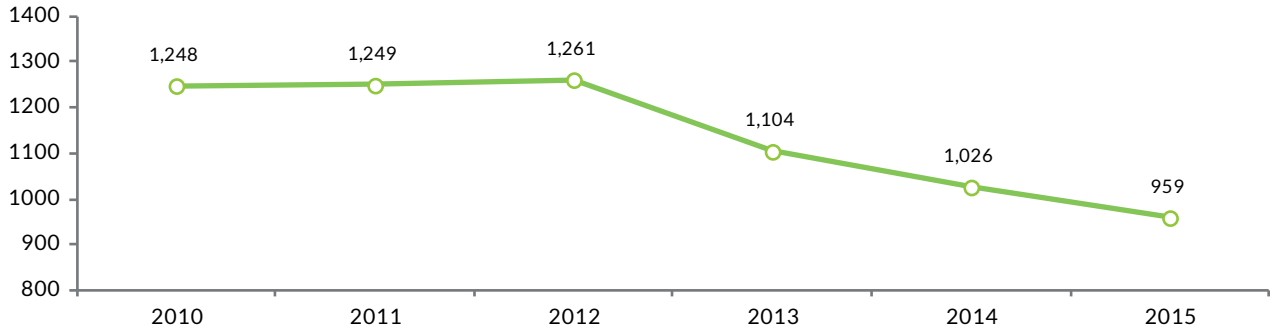
Spanish National Institute of Statistics. Material flow Accounts. Checked at INEbase website / Agriculture and the Environment / Environmental Accounts / Material Flow Accounts / Results / Material Flow Accounts. Base 2010 / Series 2008-2013. Direct material flows and main material indications / Latest data / Results

Recommended Websites:

- http://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica_P&cid=1254735976603
- http://www.ine.es/prensa/np951.pdf

Organisations with Eco-Management and Audit Scheme (EMAS)

Number of Spanish organisations adhered to EMAS



Source: MAGRAMA

- *In 2015 Spain had 959 organisations with EMAS certification*
- *In 2014, Spain was the scheme's second highest EU-28 contributor after Germany, with 26.8% of the total organisations registered*
- *Spain ranked second as regards the number of organisations registered per inhabitant, with 21 organisations/million inhabitants*

In 2015, the EMAS celebrated its 20th anniversary. That year Spain had 959 organisations attached to the EMAS register, a figure lower than 2014's, thus continuing the downward trend of the last few years.

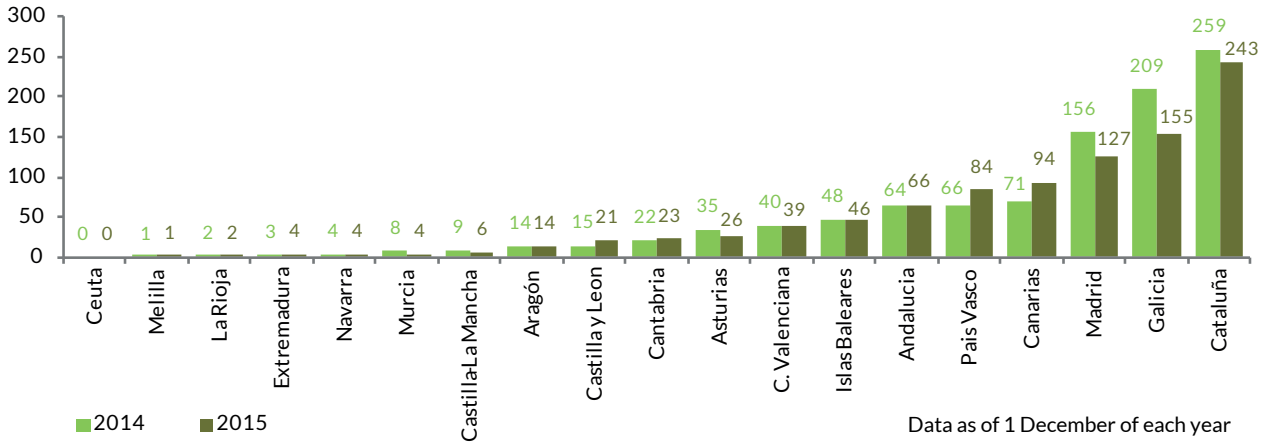
However, this reduction must not affect the actual image of Spanish companies' commitment to the EMAS, which is marked by a continuous increase up to 2012 and has seen the country occupy second place in the European ranking in most years.

Indeed, in 2012 it ranked first (ahead of Germany), and only ranked third - after Germany and Italy - in 2014. In 2014, Germany, Spain and Italy contributed 82.3% of all organisations from the EU-28 attached to the EMAS programme. Spain's contribution to the total was 26.6%. Per inhabitant, the data from the website of the EMAS register place Spain in second position together with Cyprus, with 21 organisations registered per million inhabitants, both behind Austria, with 35.

By sector, the group of economic activities included in the scope of the service industry represented 67.7% in Spain in 2015. This activity group includes "Water supply, sanitation activities, waste management and decontamination" and "Supply of electric power, gas, steam and air conditioning". The second largest group is the manufacturing industry, with 24.4% of companies registered, followed by construction, with just 5.7%. Agriculture, livestock farming, forestry and fisheries only contributed 1.9% and the extraction industry 0.3%.

Catalonia, Galicia and Madrid are the three autonomous communities which, in total, contributed 54.7% of all organisations registered in the EMAS in 2015. The other autonomous communities contributed less than 10% each, while only the Canary Islands, the Basque Country, Cantabria, Castile and León and Extremadura increased the number of organisations registered with the EMAS between 2014 and 2015.

Number of Spanish organisations adhered to EMAS. Years 2014 and 2015



Source: INE

Definition of the Indicator:

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

Methodological Notes:

- The EMAS (Eco-Management and Audit Scheme), is a voluntary EU standard that recognises 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. In Spain, 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 an EU system of environmental management and auditing (EMAS).
- 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 01 December 2015 so the figure for the end of 2015 can be assigned.
- The review and updating of existing registers in the European database (still pending adjustments in some countries), alongside the effects of the recession in the final two years, which caused the disappearance of a significant number of companies registered and forced many more to adjust 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. However, this was a standard situation across the EU, and thus Spain continues to rank among the top countries in the EU in terms of companies registered with EMAS.

Source:

Data provided by the Directorate-General for Environmental Quality and Assessment and Natural Environment. MAGRAMA.

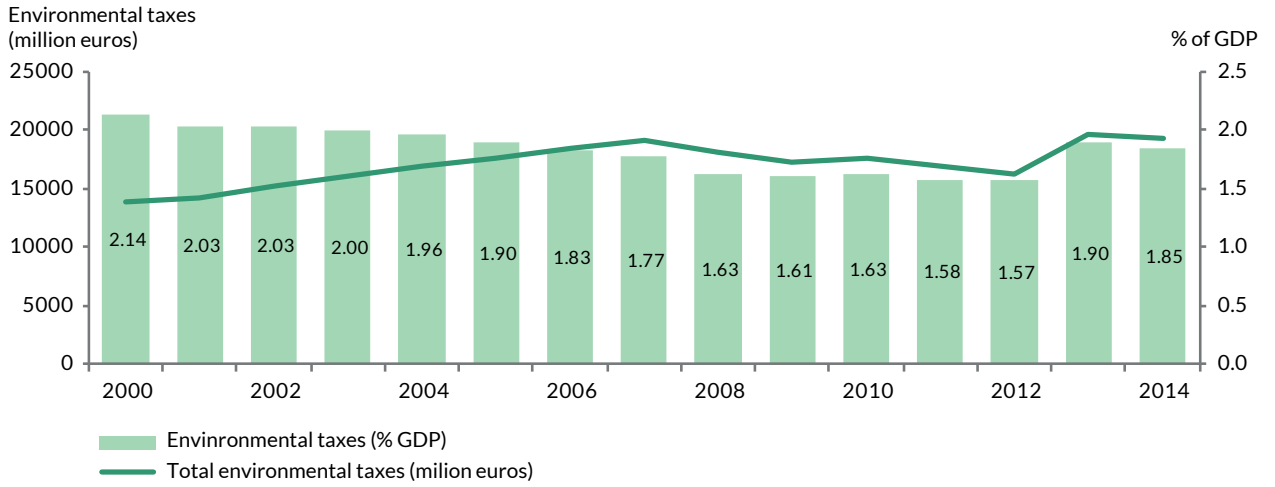
Data corresponding to 2014 and 2015 refer to 1 December of each year.

Recommended Websites:

- http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/sistema-comunitario-de-ecogestion-y-ecoauditoria-emas/
- http://ec.europa.eu/environment/emas/index_en.htm

Environmental Taxes

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



Source: MAGRAMA

- ***Between 2013 and 2014, environmental taxes decreased by 1.9%, a reduction similar to the trend experienced in previous years, which reverted exceptionally in 2013***
- ***In 2014, environmental taxes represented 1.85% of GDP, a percentage lower to that of 2013, but similar to that of 2005***
- ***Within the European framework, despite the fact that Spain contributed 5.6% of all environmental taxes in the EU-28 in 2014, it was the country with the third lowest ratio of environmental taxes to GDP***

In 2014, there was another decrease in funds raised from environmental taxes in Spain. This decrease, which amounted to 1.9%, resumed the downward trend existing since the beginning of the crisis in 2007, only interrupted in 2013. During that year, environmental taxes increased by 20%.

In relation to Gross Domestic Product (GDP), in 2014, environmental taxes represented 1.85% of GDP. It is a similar value to that of 2005 and slightly lower than that of 2013 (which amounted to 1.9%).

It must be taken into account that the 2015 OECD report "OECD Analysis of Environmental Findings. Spain 2015. Assessment and Recommendations" highlights the shrinking of the environmental tax burden and proposes the application of an environmental tax reform in all administrations of our country.

In a first aggregation, environmental taxes may be divided into three main groups: taxes on energy, taxes on transportation and taxes on pollution and resources. The estimation of Eurostat for 2014 establishes that only the contribution of taxes on energy exceeded that of 2013. These taxes represented 83.6% of total environmental taxes, a percentage slightly higher than that of 2013, which amounted to 82.3%. On the other hand, the contribution of transportation taxes was 12.9%, lower than the percentage of 2013 (13.6%). Finally, taxes on pollution and resources contributed 3.5% of the total in 2014, a percentage lower than that of 2013 (4.1%).

As regards Europe, Spain contributed 5.6% of all environmental taxes in the EU-28 in 2014. It ranked sixth, with a contribution lower than that of Germany, Italy and the United Kingdom (all of which exceeded 16%), France and the Netherlands; its contribution was higher than that of other countries such as Denmark, Sweden and Austria.

However, as regards GDP percentage, in that year Spain was the country with the third lowest ratio of environmental taxes to GDP. Its 1.9% only surpassed the percentage of Slovakia and Lithuania, and was 6 percentage points lower than the EU-28 average.

Environmental taxes as a percentage of GDP. Year 2014

Source: Eurostat

Definition of the Indicator:

This indicator presents the annual value, expressed in millions of euros and as a percentage of GDP, for revenue raised 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 included 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:

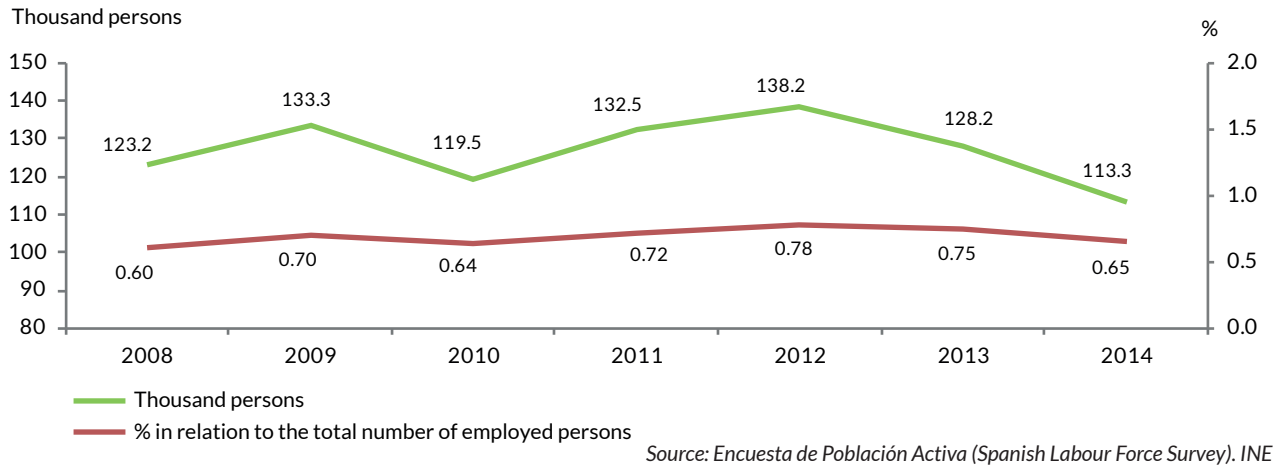
Information gathered from the Eurostat website. Available on: Data / Database by themes / Environment and energy / Environment (env) / Environmental taxes (env_eta) / Environmental tax revenues (env_ac_tax)

Recommended Websites:

- http://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica_P&cid=1254735976603
- http://www.ine.es/prensa/np941.pdf
- http://www.oecd.org/env/oecd-environmental-performance-reviews-spain-2015-9789264226883-en.htm

Green Jobs: a Limited Approximation

Employed by economic sector: Group E (Water supply, sanitation activities, waste management and decontamination) according to CNAE 2009 (thousand people and % in relation to the total number of employed persons)



Source: Encuesta de Población Activa (Spanish Labour Force Survey). INE

- ***In 2009, green job estimates in Spain ranged between 320,000 and 530,000 employees***
- ***The estimation of green jobs only considering water supply, sanitation, waste management and decontamination activities for 2014 resulted in a total of 138,200 persons employed (0.65% of total employment figures)***

The "Environmental goods and services (EGSS) accounts", provides information on the output of environmental goods, employment and gross value added related to such output. Therefore, such figures relate to employment existing in the environmental economy carried out by certain production industries (also called environmental industry or eco-industry). Other activity sectors, such as, for example, public administration, are excluded from that group.

In Spain, several studies have been conducted to estimate green jobs. Data obtained show a range with a maximum value of 530,000 green jobs estimated for the Spanish economy in 2009, according to the "Green Job Report within a Sustainable Economy" prepared by the Observatory of Sustainability in Spain. On the other hand, "Green Jobs for Sustainable Development" by Sustainlabour, in collaboration with the Biodiversity Foundation published in 2012, estimates a total of 407,191 green jobs in 2009. Finally, there are 320,000 persons employed according to the report "Green jobs. Sustainable Employment 2010", by the EIOI Foundation published in 2011.

The lack of an agreed methodology which defines, on the one hand, the group of economic activities that must definitely be part of the framework in which a green economy is developed and, on the other hand, which implements a systematic statistical method that provides homogeneous data on these related jobs, makes it difficult to estimate annual figures on green jobs and to assess its evolution. This latter aspect is key, since it is essential to periodically obtain updated data, which avoids carrying out individual studies or campaigns which are sometimes more conditioned by the information available than those carried out following a duly established methodology.

A simple approximation might be one based on the annual information of the "Spanish Labour Force Survey (EPA, as per the Spanish Acronym)" by the INE, which obtains the information corresponding to people employed by economic sectors included in Group E of the National Classification of Economic Activities (CNAE, as per the Spanish acronym) of 2009, which includes water supply, sanitation, waste management and decontamination activities. It does not include the same activities as those defined by Eurostat, but it allows the straightforward analysis of the evolution of a portion of green jobs generated in Spain. According to these data, the maximum number of people employed in these activities in the last years was in 2008, with 138,200 jobs, whereas in 2014 that figure was 113,300. Between 2008 and 2014, these activities as a percentage of total jobs ranged between 0.60% and 0.80% of the total number of jobs.

Meanwhile, the "Account of Environmental Goods and Services" by Eurostat estimates for the EU-28 and for 2012 almost 4.3 million jobs (full-time workers) in the following activities: waste management, waste water management, other environmental protection activities, management of energy resources and water management. This figure was 2.9 million jobs in 2000.

Definition of the Indicator:

The indicator presents the number of jobs for the economic sector corresponding to Group E of CNAE 2009 which includes activities related to water supply, sanitation, waste management and decontamination activities, exclusively, expressed in thousand people. It also shows the % that these jobs represent in relation to the total number of jobs. It is therefore a very limited estimation since the final calculation does not include those jobs corresponding to other CNAE 2009 groups which may be deemed to conduct environmental activities (conservation of the natural environment, hunting management, environmental research and technology, etc.), as well as those jobs corresponding to other sectors but which are related to the development of environmental activities, such as technicians within the environmental departments of the production and service industries.

Methodological Notes:

The indicator refers only to jobs within the economic sector of Group E, of CNAE 2009, which includes those activities devoted to water supply, sanitation, waste management and decontamination. It may be considered as a partial estimate according to which a general trend may be studied, but it is not global information on jobs within the environmental industry, and therefore, on "green jobs".

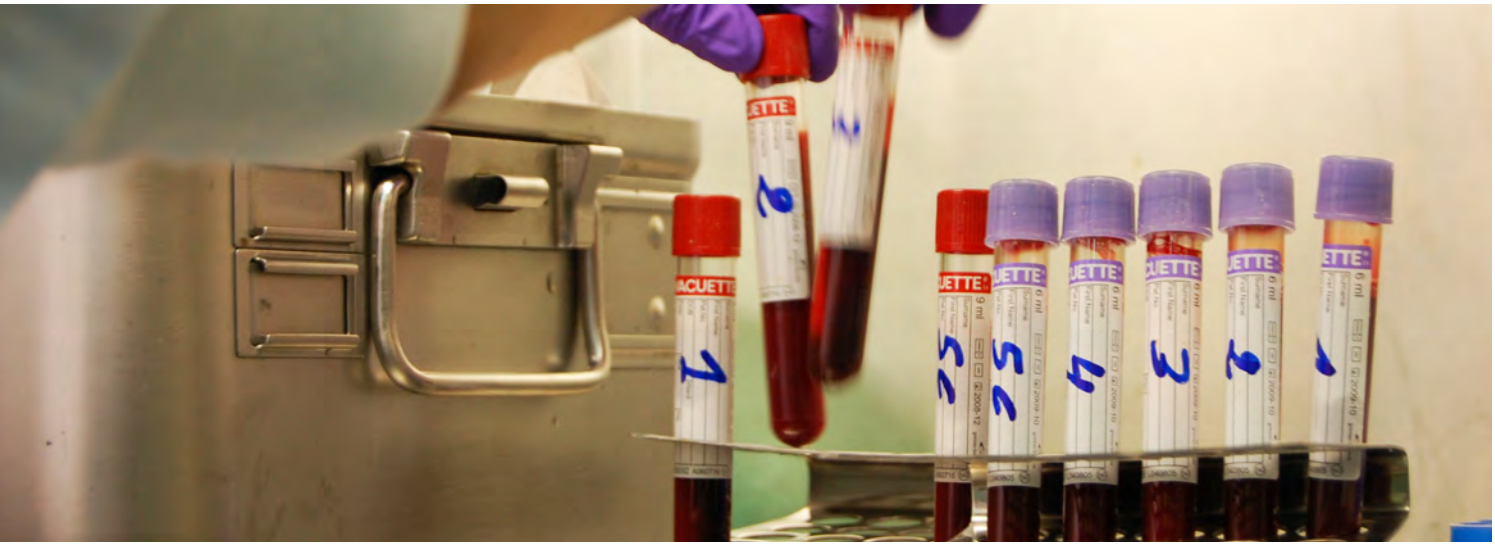
The "Account of Environmental Goods and Services" by Eurostat refers to the "environmental industry or eco-industry" and it is comprised of a heterogeneous group of goods and services providers aimed at the protection of the environment and the management of natural resources.

Source:

National Institute of Statistics, 2016. Encuesta de Población Activa (Spanish Labour Force Survey). Information on the website: INEbase/Labour Market/Economic Activity, employment and unemployment/Active population survey/Annual results/Average of the four quarters of the year/Jobs/ 3.24 Jobs by gender and economic sector. Absolute values and percentages regarding the total of each gender.

Recommended Websites:

- http://www.ine.es/dynt3/inebase/index.htm?padre=811
- http://www.eea.europa.eu/themes/economy/intro
- http://www.eea.europa.eu/media/newsreleases/the-2018green-economy2019-can-encourage
- http://ec.europa.eu/eurostat/statistics-explained/index.php/Environmental_economy_-_employment_and_growth



2.9 RESEARCH, DEVELOPMENT AND INNOVATION

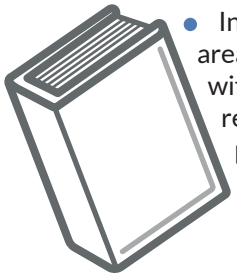
Spain has implemented a series of major changes regarding R&D&I in the last five years, both at regional and national level.

Firstly, the Act on Science, Technology and Innovation was approved in 2011, before being followed by two strategic documents, the National Plan for Scientific, Technical and Innovative Research 2013-2016 and the Spanish Strategy of Science, Technology and Innovation 2013-2020, both approved in 2013. The latter was prepared in collaboration with the autonomous communities, thus establishing the foundations for the definition of the strategy and articulation of R&D&I policies of the General State Administration, autonomous communities and the European Union.

In 2014, the autonomous communities prepared and presented their regional innovation strategies for Smart Specialisation (RIS3) with the purpose of complying with the preliminary condition (the so-called "*ex-ante* conditionality") established by the Commission for the co-funding of activities with ERDF funds (European Regional Development Fund) so as to lay the foundations of a "highly competitive regional framework based on the smart specialisation of territories". Likewise, the Commission considered the Spanish Strategy of Science, Technology and Innovation, the R&D&I strategy for smart specialisation at national level. The purpose of regional strategy is to identify the competitive and comparative advantages of each region. In the case of Spain, many autonomous communities have identified their priority fields for research and innovation in: sustainable agriculture and natural resources (14 autonomous communities); smart and sustainable transport (13 autonomous communities); sustainable energy (9 autonomous communities) and digital economy and society (9 autonomous communities).

Finally, in November 2015, the creation of the National Research Agency (AEI, as per the Spanish acronym), as set forth in the Act on Science, Technology and Innovation, was approved; it is the new body responsible for the management of the funding of R&D activities. The AEI will be in charge of funding and managing public R&D&I subsidies of the State Secretariat for Research, Development and Innovation included in the National Plan for Scientific and Technical Research and Innovation and, at the same time, it may manage, through the corresponding management delegations, public R&D&I subsidies of the General State Administration.

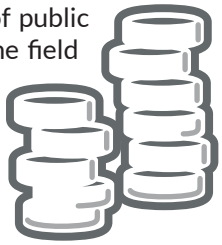
Main bibliometric indicators in environmental sciences



- In 2014, publications in the area of environmental sciences, with five thousand documents, represented 6.4% of all Spanish publications.

Public subsidies for R&D&I from environmental programmes

- In 2014, the number of public subsidies granted in the field of the environment was 919, amounting to a total of 226.3 million euros.



Budget allocated to R&D&I in environmental programmes

- In 2015, funds allocated to environmental programmes represented 4% of total credits for R&D&I set out in the General State Budget.

Public financing for R&D&I

- In 2014, final budget credits allocated to the socio-economic objective of the environment amounted to 3.5% of total budget credits.
- In 2015, the creation of the National Research Agency was approved. It is the new body in charge of managing the public R&D funding of the General State Administration.

Main Bibliometric Indicators in Environmental Sciences

Main bibliometric indicators in environmental sciences

Year	Number of documents	Number of citations per document	Percentage of international collaboration	World percentage	Word Ranking
2004	2,040	2,024	33.7	3.1	10
2005	2,296	2,263	36.0	3.2	10
2006	2,738	2,699	37.3	3.3	10
2007	2,942	2,881	37.4	3.3	10
2008	3,402	3,353	37.2	3.7	10
2009	3,618	3,563	38.4	3.6	10
2010	4,078	3,995	40.8	3.8	10
2011	4,498	4,403	43.8	3.8	9
2012	4,784	4,673	44.4	4.0	9
2013	4,890	4,795	47.9	3.8	9
2014	5,010	4,708	50.5	3.7	9

Note: data consulted in May 2016

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

- ***In 2014, publications in the area of environmental sciences, with five thousand documents, represented 6.4% of all Spanish publications***

The field of environmental sciences has increased its associated scientific production significantly in Spain in the last 10 years: by around 150%, from 2,040 documents in 2004 to 5,010 documents in 2014.

This increase is not only reflected by the number of documents, but also the proportion of documents within this field with respect to the total number of Spanish publications, from 5.9% in 2013 to 6.4% in 2014.

In 2014, Spain occupied ninth position in the world rankings of scientific production for the fourth year in a row, after the review of data corresponding to previous years. The ranking is currently led by these countries, in the following order: United States of America, China, the United Kingdom, Germany, India, Canada and Australia.

On the other hand, half the papers on environmental sciences published in Spain in 2014 were produced within the framework of an international collaboration, almost seventeen percentage points above 2004 and two percentage points above the previous year.

Among the categories comprising the field of environmental sciences, the highest production corresponds to environmental chemistry, ecology and pollution. In terms of the rate of growth of the number of documents, of chief significance are: global change, pollution and management, follow-up, policies and law. The only category with a negative growth rate in Spain in the last 5 years is water science and technology, with a drop of 4%.

Number of documents by category within the area of environmental sciences

	2008	2009	2010	2011	2012	2013	2014
Ecological modelling	92	125	133	148	139	160	149
Ecology	762	807	875	989	997	1,039	1,039
Environmental chemistry	851	808	872	984	1,038	1,109	1,206
Environmental engineering	551	618	718	740	907	747	831
Environmental sciences (several)	435	497	603	662	762	796	859
Global change	88	109	144	168	195	207	272
Health, toxicology and mutagenesis	305	415	398	429	368	430	492
Management, follow-up, policies and law	287	310	384	466	573	593	550
Nature and landscape conservation	241	243	288	342	313	370	396
Pollution	589	697	665	793	827	955	1,005
Waste management and elimination	460	569	549	609	652	638	678
Water science and technology	659	729	718	828	794	805	691

Note: data consulted in May 2016

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

Definition of the Indicator:

This 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 Spanish production in relation to global production and position of Spain in the world rankings.

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, of which at least one is from another country, are taken into consideration.
- World rating: percentage of the production of a country or institution in relation to the world's overall production within the same period and field.
- Word Ranking: position in the world ranking according to production volume.

Source:

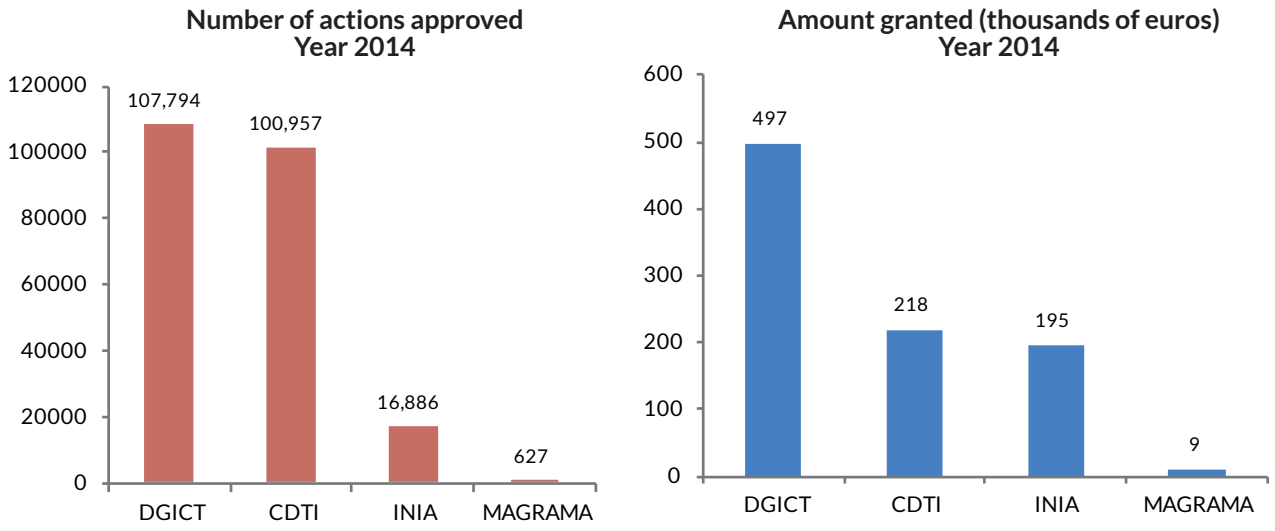
Prepared with data provided by SCImago Journal & Country Rank (SJR).

Recommended Websites:

- http://icono.fecyt.es/Paginas/home.aspx
- http://www.scimagojr.com/

Public Subsidies for Environmental R&D&I

Number of environmental actions approved and amount granted in R&D&I, 2014



Source: Spanish Foundation for Science and Technology (FECYT)

- ***In 2014, the number of public subsidies granted in the field of the environment was 919, amounting to a total of 226.3 million euros***

The charts show the number of 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 during 2014.

It includes all actions and funds granted to the different programmes organised by:

- The Ministry of Agriculture and Fisheries, Food and Environment: scientific research projects in the Network of National Parks.
- National Institute for Agricultural and Food Research and Technology (INIA, as per the Spanish acronym): subsidies for the training of researchers (FPI-INIA), complementary actions, R&D&I projects and research, development and innovation projects in the rabbit production field.
- Centre for Industrial Technological Development (CDTI, as per the Spanish acronym): EEA Grants, CDTI projects on environmental R&D and climate change: business R&D&I, challenges and critical enabling technology.
- General Directorate for Scientific and Technical Research (DGICT, as per the Spanish acronym): the following challenges are selected: "Action on climate change and efficiency on the use of resources and raw materials" and "Food security and quality; sustainable and productive agricultural activity, natural resources, sea and marine research" for the calls on Investigation Challenges and Collaboration Challenges.

In 2014, a total of 919 actions for the environment with an amount of 226.3 million euros were granted. Regarding the latter, we must highlight the calls on Research and Collaboration Challenges and EEA Grants, CDTI projects on Environmental R&D and Climate Change (Challenges).

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 Notes:

- The amount of the actions that correspond to multi-annual expenditure commitment.

Source:

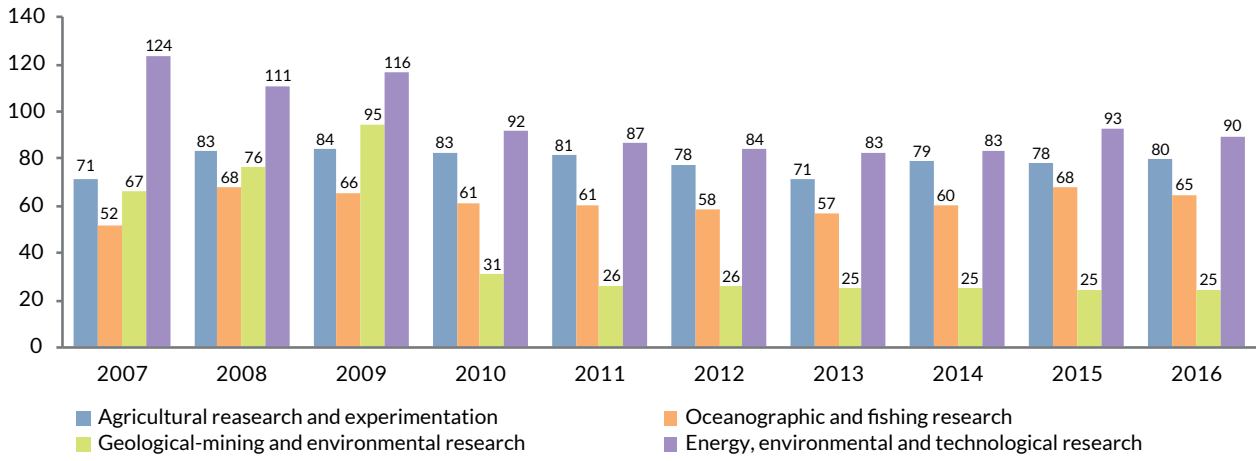
Data provided by the Department of Metrics and Follow-Up of R&D&I Policies of the Spanish Foundation of Science and Technology from data provided by the different participating entities. Ministry of Economy and Competitiveness.

Recommended Websites:

- http://icono.fecyt.es/Paginas/home.aspx

Budget Allocated to R&D&I in Environmental Programmes

Budget allocated to R&D&I programmes within environmental expenditure policy (million euros)



Source: Ministry of Finance and Public Administrations, General State Budget

- ***In 2015, funds allocated to environmental programmes represented 4% of total credits for R&D&I set out in the General State Budget***

The chart shows the R&D&I budget by environmental programme over the last ten years. As is the case every year, research on energy, the environment and technology is provided with the highest budget, followed by research and experimentation in the agricultural field.

Environmental research includes the following Expenditure Policy no. 46 Programmes: 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 together represented 4% of the total R&D&I budget for 2016 with a slight drop of 0.08 percentage points in comparison to 2015.

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.

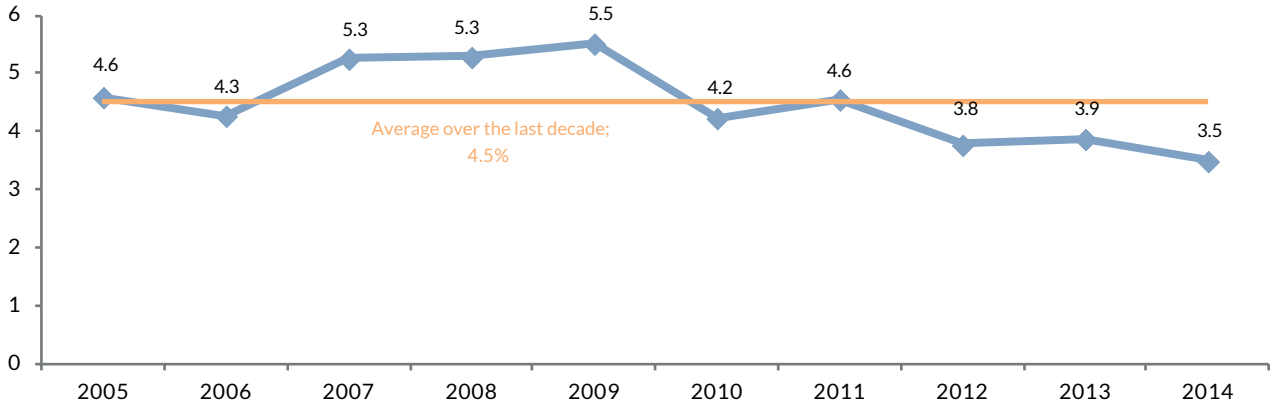
Methodological Notes:
Data consulted in January 2016.

Source:
Data on the R&D&I Budget (Expenditure Policy no. 46 Programme) provided by the Ministry of Finance and Public Administrations, General State Budget.

Recommended Websites:
- http://www.sepg.pap.minhap.gob.es/sitios/sepg/es-ES/Presupuestos/.aspx
- http://icono.fecyt.es/Paginas/home.aspx

Public Financing for R&D&I

Percentage distribution of final credits for environmental socio-economic objective



Source: Ministry of Economy and Competitiveness

- ***In 2014, final budget credits allocated to the socio-economic objective of the environment amounted to 3.5% of the total budget credits***
- ***In 2015, the creation of the National Research Agency was approved. It is the new body in charge of managing the public R&D funding of the General State Administration***

The chart shows the evolution of final budgetary credits for the environmental socio-economic objective that state administrations allocate for R&D expressed in percentage points in relation to the total budget for R&D.

Government Budget and Appropriations or Outlays for R&D (GBAORD) Statistics, carried out by the State Secretariat for Development and Innovation of the Ministry of Finance and Competitiveness, aim to determine the financial resources that are allocated to research and development activities by the General State Administration and the autonomous communities.

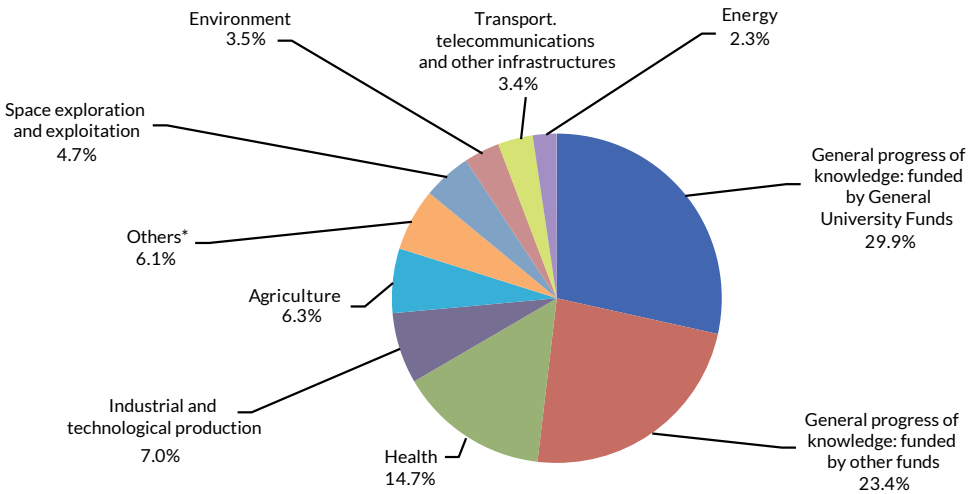
They additionally seek to establish the socio-economic goals that governments base their R&D financing policies on, for which purpose these statistics include those budgets identified by NABS socio-economic objectives (Nomenclature for the analysis and comparison of science budgets and programmes), official classification proposed by the European Union.

This is undertaken within the framework of the statistical information requirements of the Organisation for Economic Cooperation and Development (OECD) and the EU's Statistical Office (Eurostat).

3.5% of the total final credits allocated to the range of socio-economic objectives corresponds to the environment; this percentage is lower than the average of the last decade (4.5%). In 2005, this percentage reached 4.6% of the total distribution of final credits and reached its highest point in 2009 with 5.5%. On the other hand, "General progress of knowledge: financed with General University Funds" represented 29.9%, as shown

in the percentage distribution of socio-economic objectives (based on Nomenclature for the analysis and comparison of scientific programmes and budgets-NABS) corresponding to 2014. According to this distribution, the objective regarding the environment amounted to 3.5% that year.

Percentage distribution of final credits by socio-economic objective (based on NABS). Year 2014



Source: Ministry of Economy and Competitiveness

*'Other' includes: Exploration and exploitation of the Earth (1.6%), Defence (1.3%), Education (1.1%), Political and social systems, structures and processes (1.3%) and Culture, leisure, religion and mass media (0.9%).

Definition of the Indicator:

The indicator shows the final budgetary credits for the environmental socio-economic objective that state administrations allocate for R&D expressed in percentage points in relation to the total budget for R&D.

Methodological Notes:

The information on R&D&I public funding known as Government Budget and Appropriations or Outlays for R&D (GBAORD) Statistics has the goal of determining the financing resources that state 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).

Source:

Ministry of Economy and Competitiveness.

Recommended Websites:

- http://www.idi.mineco.gob.es/portal/site/MICINN/

2.10 WASTE

In 2015, the framework for waste management in Spain was completed with the "State Waste Management Framework Plan (PEMAR, as per the Spanish acronym) 2016-2022", approved by the Agreement of the Council of Ministers of 6 November 2015.

The Plan is configured as the main instrument guiding waste policy in Spain over the coming years, converting it into a reference for improving and promoting actions that allow Spain to comply with established legal objectives.

In line with the EU policy on waste, the aim is to move Spain closer towards being a society that is efficient in its use of resources. The aim is to substitute the linear economy based on production, consumption and disposal with a circular economy that reincorporates material that contains waste into the production of new products or raw materials. The PEMAR will allow two steps to be taken towards a circular economy through the application of the hierarchy of EU legislation. This principle establishes that prevention must be a priority in relation to waste policy, followed by waste preparation for re-use, recycling, other forms of recovery (including energy recovery) with waste disposal, mainly through landfill deposits, being the final option (which, moreover, must be reduced for all waste flows).

This State Framework Plan continues a planning structure that, at state level, uses the Integrated National Waste Plan 2008-2015 and the State Waste Prevention Programme 2014-2020 as points of reference. These instruments are complemented with planning and waste management tools developed by autonomous communities.

For its part, the Plan will undoubtedly be one of the instruments that will contribute to reaching the objectives for the reduction of waste established in the EU Action Plan for the Circular Economy approved in December 2015. The responsibility for the closure of the circle of life cycles of products through recycling and reuse falls on political and business leaders and requires the participation of society at large. It must not be forgotten that these actions will benefit both the environment and our economic system.

In this sense, one of the key measures adopted in this EU Plan is focussed on the reduction of food waste (cutting food waste in half by 2030). Spain has been working in this area for some time. Promoting voluntary agreements with the commitment of the private sector is fundamental, and these include the Agri-food Chain Agreement: Environmental Sustainability in the Agri-food Sector".

In the EU, the most significant objectives for municipal waste are those set out by the Directive on the landfill of waste and by the Directive on Packages and Packaging Waste. In 2015, the European Commission proposed new objectives for municipal waste: recycling and processing for reuse of 60% of municipal waste generated in 2025 and 65% in 2030.

Municipal Waste Generation

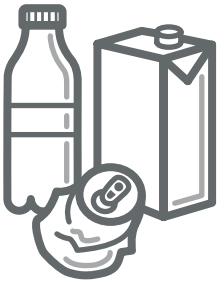
- Between 2000 and 2014, municipal waste generation decreased by 23.7% in Spain.
- In 2014, Spain generated 8.4% of the total municipal waste generated in the EU-28, a contribution lower than that of the year 2001, which amounted to 10.4%.
- Per inhabitant, Spain generated a total of 435 kg in 2014, a decrease of 33.9% with respect to the year 2000.

Municipal waste treatment

- In 2014, 17% of municipal waste generated by inhabitants was treated by means of composting, 15.6% by means of recycling, and 12.4% was incinerated with energy recovery.
- On the other hand, landfill was used for 55% of municipal waste.

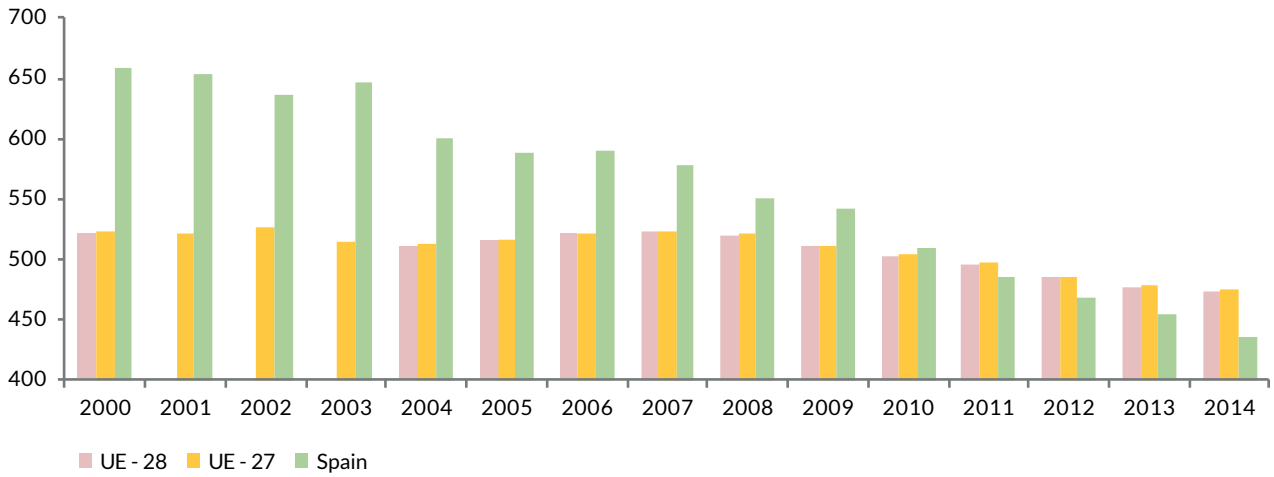
Packaging waste recycling and recovery

- The recycling and recovery rate of packaging waste continues to increase year after year, with values of 68.7% and 75% in 2014.
- Legally established objectives for 2009 had already been met by that year: the recovery objective (60%) in 2006 and the recycling rate (55%) in 2007.



Municipal Waste Generation

Generation of municipal waste generation per capita (kg/inhabitant)



Source: Eurostat

- *Between 2000 and 2014, municipal waste generation decreased by 23.7% in Spain*
- *In 2014, Spain generated 8.4% of the total municipal waste generated in the EU-28, a contribution lower than that of the year 2001, which amounted to 10.4%*
- *Per inhabitant, Spain generated a total of 435 kg in 2014, a decrease of 33.9% with respect to the year 2000*

Between 2000 and 2014, the total amount of municipal waste generated in Spain decreased by 23.7% from 26.5 million tonnes in 2000 to 20.2 million tonnes in 2014. This decrease is much higher than that estimated for the EU-28 during the same period (5.1% according to Eurostat).

This decrease led, over these 15 years, to the percentage of total municipal waste of the EU-28 produced by Spain falling from 10.4% in 2000 to 8.4% in 2014.

Per inhabitant, municipal waste generation shows a major downward trend: in the year 2000 Spain generated 658 kg/inhab., whereas in 2014 this amount dropped to 435 kg/inhab. Expressed as a percentage, this evolution shows a decrease by almost 34%, a much higher value than that of the 9% estimated for the EU-28.

By country, in 2014 Spain ranked 16th in municipal waste generation per inhabitant (since data corresponding to Ireland, Greece and Romania were not available). Moreover, during that year, the 435 kg/inhab. generated in Spain was 8.2% lower than the 474 kg/inhab. generated on average in the EU-28.

The "State Waste Management Framework Plan (PEMAR) 2016-2022", approved in November 2015, reinforces the waste reduction objectives of the "State Waste Prevention Programme 2014-2020" which, together with local and regional programmes, business prevention programmes and minimisation plans, establishes the course of action for waste management.

Definition of the Indicator:

Estimated annual amount of municipal waste generated per inhabitant

Methodological Notes:

- The indicator shows municipal waste generation expressed in kilograms per inhabitant (kg/inhabitant) and refers to waste collected by municipal services or by related services contracted by local authorities. 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 street cleaning, parks, recreational areas and beaches, dead domestic animals and abandoned vehicles will also be considered domestic waste.
- Data used is what was published by Eurostat on its website in the moment when the 2014 indicator was prepared and are considered "estimates", so it is likely that such data will be corrected subsequently.
- In 2013 the number of Member States of the European Union increased to 28 after the accession of Croatia. The updating process of the series is not fully completed, which is why there are years without information. Said circumstance will be corrected with time.

Source:

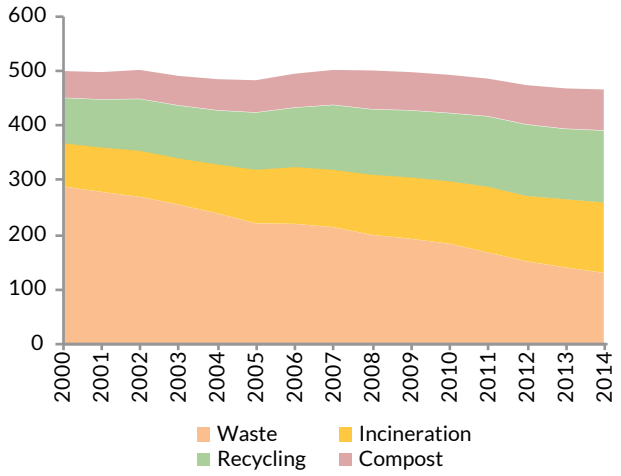
- Eurostat. "Municipal waste [env_wasmun]". Information gathered from the Eurostat website: Eurostat/Data/Database/Database by themes/Environment and energy/Environment/waste/waste streams/Municipal waste (env_wasmun).

Recommended Websites:

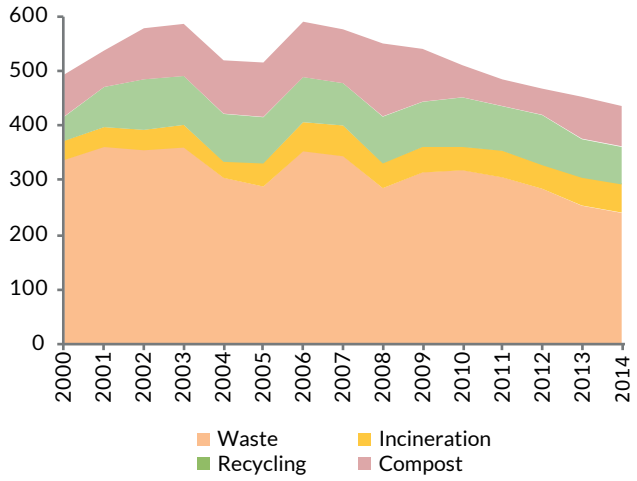
- http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/prevencion-y-gestion-residuos/
- http://ec.europa.eu/eurostat/data/database
- http://ec.europa.eu/eurostat/waste
- http://www.ine.es/prensa/np949.pdf

Municipal Waste Treatment

Municipal waste treatment in the EU-27 (kg/inhab.)



Municipal waste treatment in Spain (kg/inhab.)



Source: Eurostat

- ***In 2014, 17% of municipal waste generated by inhabitant was treated by means of composting, 15.6% by means of recycling, and 12.4% was incinerated with energy recovery***
- ***On the other hand, landfill was used for 55% of municipal waste***

The increase in the amount of mechanical and biological treatment facilities, facilities for the classification of packages and facilities for the of bio-waste played a key role in the improvement of waste treatment experienced in Spain.

Even though data are still provisional (information for Ireland, Greece and Romania is not yet available), according to the estimate by Eurostat for 2014, Spain would rank 15th with a total of 435 kg/inhab.

Between 2000 and 2014, the evolution in the amount of municipal waste allocated in Spain to each of the different types of treatment is as follows:

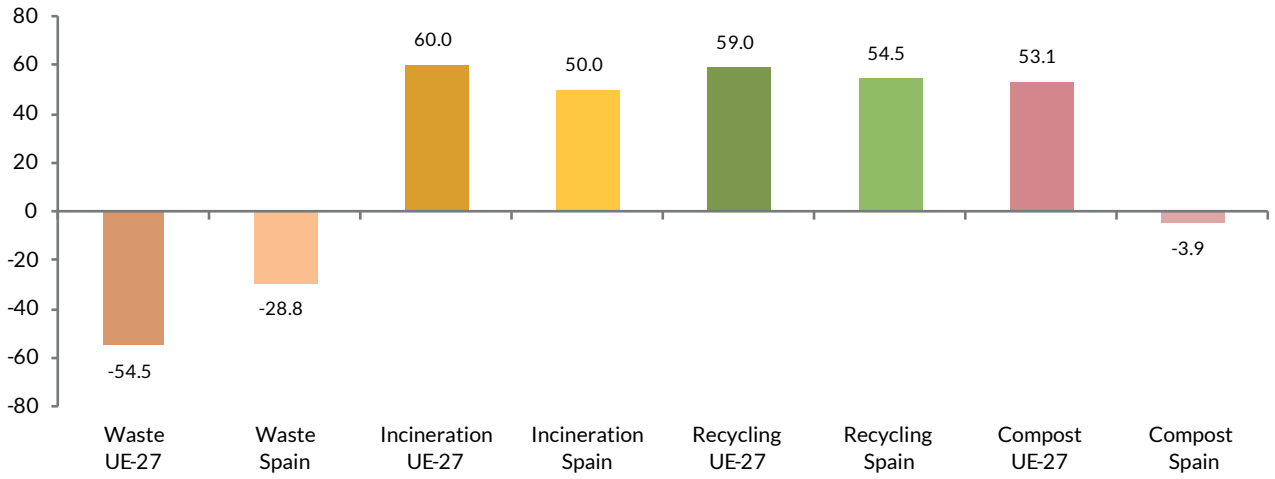
- 28.8% reduction of waste per inhabitant deposited in landfill. In the EU-27, the figure was 54.5%.
- 50% increase in waste incinerated per inhabitant (in all cases with energy recovery). In the EU-27, the figure was 60%.
- 54.5% increase in recycled waste per inhabitant. In the EU-27, the figure was 59%.
- 3.9% decrease in waste treated in composting plants. In the EU-27, the figure was 53.1%.

In Spain, landfill is the most common method of waste treatment (55%) according to the distribution of the different types of treatment (in terms of kg treated per inhabitant) in 2014. Composting was second, with 17% of municipal waste generated by inhabitant, followed by recycling, with 15.6% being treated this way. Finally,

incineration with energy recovery was the method used for 12.4% of municipal waste.

In the EU-27, this distribution shows a balance of treatment methods: recycling, landfill and incineration represented approximately 28% of municipal waste treated per inhabitant. The contribution of composting is lower, with a treatment rate of approximately 16% of said waste.

Change in the treatment of municipal waste per inhabitant between 2000 and 2014 (%)



Source: Eurostat

Definition of the Indicator:

The indicator shows the annual volume of municipal waste processed per inhabitant, specifying municipal waste deposited in landfills, incinerated with energy recovery and recycling.

Methodological Notes:

- Municipal waste generation is 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 street cleaning, parks, recreational areas and beaches, dead domestic animals and abandoned vehicles will also be considered domestic waste.
- Data used is what Eurostat published on its website when the 2014 indicator was prepared and are considered "estimates", so it is likely that such data will be subsequently adjusted.
- In 2013 the number of Member States of European Union increased to 28 after the accession of Croatia. The updating process of the series is not fully completed which is why there are years without information. Said circumstance will be corrected over time.

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).

Recommended Websites:

- http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/prevencion-y-gestion-residuos/
- http://ec.europa.eu/eurostat/data/database
- http://ec.europa.eu/eurostat/waste

Packaging Waste Recycling and Recovery

Packaging waste recovered or incinerated in facilities for waste incineration with energy recover. Year 2014

Materials	Generated packaging waste (t)	Recycled packaging waste (t)	Recovered packaging waste with energy recovery (t)	Recycling rate (%)	Valuation rate (%)
Glass	1,368,393	953,266	960,442	69.7	70.2
Plastic	1,418,487	602,245	836,755	42.5	59.0
Paper and Cardboard	3,356,000	2,625,000	2,789,044	78.2	83.1
Metals	424,946	344,443	344,443	81.1	81.1
Wood	290,395	186,707	217,692	64.3	75.0
Other	4,348	0	0	0.00	4.58
Total	**6,862,569**	**4,711,661**	**5,148,376**	**68.7**	**75.0**

Source: MAGRAMA

Global packaging waste recycling and recovery rate (%) 2009 targets: recovery at 60%, recycling at 55%

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Recycling rate	50.4	54.0	56.3	59.1	60.3	61.9	64.4	66.5	66.6	68.7
Recovery rate	56.1	60.7	62.1	65.4	67.8	70.0	72.1	73.0	73.3	75.0

Source: MAGRAMA

- ***The recycling and recovery rate of packaging waste continues to increase year after year, with values of 68.7% and 75% in 2014***
- ***Legally established objectives for 2009 had already been met by that year: the recovery objective (60%) in 2006 and the recycling rate (55%) in 2007***

The growth of recycling and recovery rates of packaging waste has been continuous in the last few years, which demonstrates the impetus provided by administration and the increasing commitment of citizens.

Over just the last ten years only, the recycling rate increased from 50.4% in 2005 to 68.7% in 2014. In the case of packaging waste recovery (including incineration with energy recovery), percentages increased from 56.1% to 75% between 2005 and 2010.

In 2006, the legally established 60% recovery objective for January 2009 was met. The overall 55% recycling objective, also established for 2009, was met as well.

In relation to last year, the increase of recycled and recovered amounts was higher than that of the amounts of packaging waste generated: between 2013 and 2014 packaging waste generated increased by 2.5%, whereas packaging waste recycled increased by 5.7% and packaging waste recovered increased by 4.9%.

Variation in the generation of packaging waste as regards its recycling and recovery with energy recovery between 2013-2014 (%)

Materials	Generated packaging waste (%)	Recycled packaging waste (%)	Recovered packaging waste with energy recovery (%)
Glass	1.8	5.2	2.3
Plastic	8.6	13.3	9.5
Paper and Cardboard	0.1	4.4	4.8
Metals	5.0	5.1	5.1
Wood	4.4	4.4	5.5
Other	-61.4		
Total	**2.5**	**5.7**	**4.9**

Source: MAGRAMA

Definition of the Indicator:

Packaging waste recycling and recovery rate expressed in %.

Methodological Notes:

- The recycling and recovery rate is calculated based on tonnes recycled and recovered (including energy use) in comparison to the total of packaging waste generated (calculated on the basis of the packaging introduced into 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 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.

Source:

- 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.

Recommended Websites:

- http://www.magrama.gob.es/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.sigre.es
- http://sigfito.es
- http://www.ecovidrio.es/


Electrónica informática
Muebles
Neumáticos
Zapatos
Textil
Vidrio
Papel
Electrodomésticos
Cartón

2.11 AGRICULTURE

As it constitutes the basis for food production, the agricultural sector is key for the well-being of the population. Moreover, it contributes to the growth of the economy and employment and plays a fundamental role in rural societies. At the same time, however, it is a sector with repercussions on the environment due to, among other reasons, its consumption of natural resources (water, soil, energy, etc.) and agro-chemical products, and the generation of waste and polluting omissions arising as a consequence.

In the EU, the agriculture sector represents 6% of GDP and even despite the economic situation of recent years, the sector has responded well, although it is by no means exempt from problems such as those arising from climate change, water limitations and others.

In 2014-2015, for example, consumption of fertilisers rose in Spain, as did consumption of phytosanitary products and the total irrigated surface area (a type of agriculture that involves greater use of water and energy). At the same time, in 2014, agricultural activities were responsible for 11.4% of total greenhouse gas emissions in Europe, as seen in Chapter 2.3.

Global forecasts show that world food production must double between now and the year 2050 if the demand for food arising from population growth is to be met. In this context, the reduction of the environmental impact of the agriculture sector can only be achieved through improvements in the production process, technology and development, rather than through reducing food production. Responding to the growing demand for food (with the additional pressures that this generates), while

at the same time reducing the environmental repercussions of agricultural activity, must therefore be tackled in a bid to improve the sector's efficiency in such a way that resources can be increased while dependence on agricultural product decreases, ensuring maximum optimisation of resources.

In this sense, there is still great room for improvement in terms of making the agriculture sector more sustainable and efficient. Improvements in the efficiency of the application of agrochemicals and the development of more efficient environmental technologies are two elements that might contribute to the reduction of the sector's environmental impact in Spain.

Another example of how it is possible to reduce the environmental impact of the sector, without an accompanying economic loss, is offered by the highly positive progress made by organic agriculture and livestock farming in Spain: between 2000 and 2012, the value of organic production in the country rose by over 400% and the domestic market for organic produce has grown almost fivefold, reaching around 998 million euros in 2012, and these branches of agricultural activity still have great potential.

This chapter covers the elements of the agricultural sector, including farming and livestock activities, although the abbreviated term "Agriculture" is used throughout.

Fertiliser consumption

- Although overall consumption of phosphate and potassium fertilisers increased in 2015 compared to 2014, relative consumption (quantity of product per unit of surface) has fallen, as it has for nitrogen fertilisers.
- The decrease, both in absolute and relative terms, per unit area, is clear if the quantities used in 2001 and 2015 are compared.

Organic farming

- In 2014, the area used for organic agriculture grew by 3.3% and is now 1,663,189 ha.
- 87.1% of this area is certified.
- With 51.3%, Andalusia is the autonomous community with the largest area dedicated to organic agriculture.
- The number of producers (primary activity) grew by 3.3%, reaching 30,602 operators in 2014.

Irrigated area

- The irrigated area represented 14.5% of the total national agricultural area in 2015.
- In 2015, the irrigated area grew in all autonomous communities from 2014.
- Andalusia remains the autonomous community with the largest irrigated area in absolute terms (29% of that national total), while the C. Valenciana has the highest percentage in terms of autonomous agricultural area (40.2%).

Phytosanitary product consumption

- In 2014, average phytosanitary product consumption increased by 1.3% from 2013, reaching 2.74 kilograms of active ingredients per hectare.
- Consumption of herbicides reached 31.6 thousand tonnes in 2014, representing a year-on-year increase of 6.1%.
- In 2014, the Canary Islands and the Region of Murcia were, once again, the autonomous communities with the highest consumption of phytosanitary products.

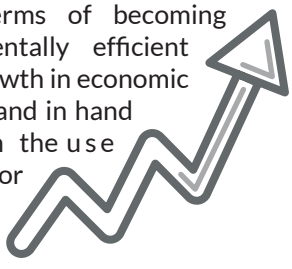
Organic livestock farming

- The number of organic livestock holdings increased by 3.1% in 2014 compared to the previous year.
- Almost half of organic livestock holdings in Spain are beef cattle holdings, with much smaller numbers for other types of organic livestock holdings.

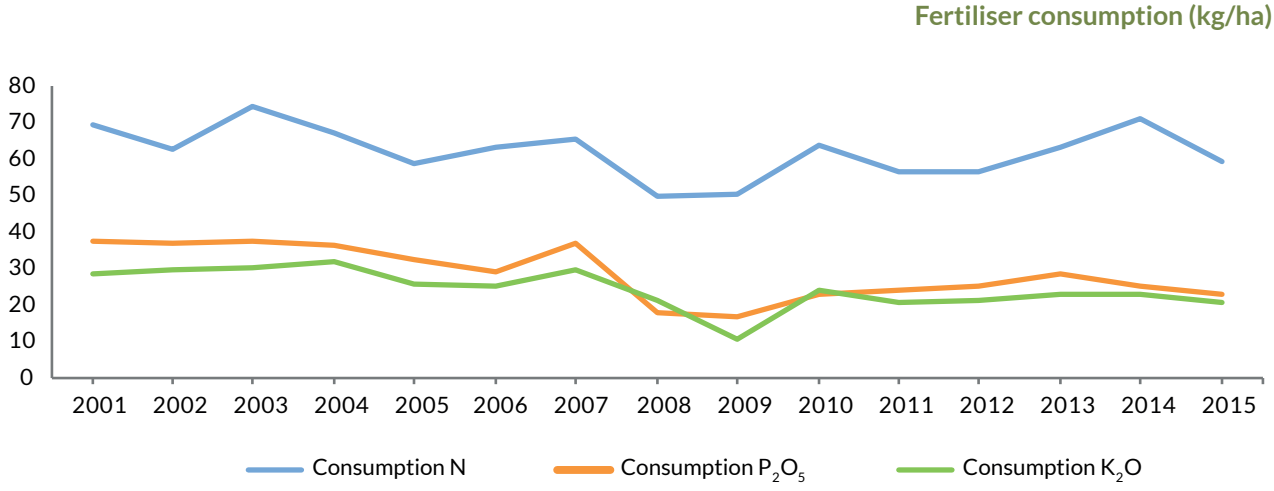
- Almost 60% of all organic livestock holdings are concentrated in a single autonomous community: Andalusia.

Environmental efficiency in agriculture

- Domestic agriculture has room for improvement in terms of becoming a more environmentally efficient sector, so that its growth in economic terms does not go hand in hand with an increase in the use of natural resources or chemical products.



Fertiliser Consumption



Source: MAGRAMA

- ***Although overall consumption of phosphate and potassium fertilisers increased in 2015 compared to 2014, relative consumption (quantity of product per unit of surface) has fallen, as it has for nitrogen fertilisers***
- ***The decrease, both in absolute and relative terms, per unit area, is clear if the quantities used in 2001 and 2015 are compared***

The use of fertilisers is essential to provide and/or replenish the soil with those nutrients lost through cultivation. Their use is also essential for increasing land productivity and for ensuring that agricultural activity is maintained.

This does not mean, however, that these products can be applied without limits, as excessive fertilisation can have environmental impacts in terms of greenhouse gas emissions and pollution and eutrophication of water through the generation of leachates and other pollutants.

A rational and efficient use of fertilisers, therefore, will see a reduction in the negative environmental impact of agricultural activity, in addition to important economic savings for the producer.

The evolution in the consumption of these types of product in Spain over recent years shows a declining trend, albeit a mild one with considerable year-on-year fluctuations, which may be interpreted as an improvement in the efficiency of their use.

In this way, and despite the fact that in 2015 consumption of phosphate fertilisers increased in absolute terms compared to the previous year (3.3% and 6.3% respectively) while consumption of nitrogen fertilisers fell by 3.1%, a decreasing trend would be exhibited in all cases if the variable measured were relative consumption, i.e. the use of fertilisers per unit area.

Therere, when analysing the quantities of fertilisers applied per unit area, it is evident that these diminished in 2015 in all cases compared to 2014. Consumption of nitrogenous fertilisers (N) was down from 71.1 kg/ha in 2014 to 59.6 kg/ha in 2015, the use of phosphate fertilisers (P_2O_5) was down from 25.7 to 23.0 kg/ha and potassium fertilisers (K_2O) fell from 23.1 to 21.2 kg/ha: year-on-year decreases of 16.2%, 10.5% and 8.2% respectively. Between 2014 and 2015, the fertilised surface grew by 15.6%, going from 15.5 million hectares in 2014 to 17.9 million hectares in 2015.

The fall in the use of fertilisers is made clearer in the differences, in both absolute and relative terms, between 2001 and 2015. In 2001, a total of 1.13 million tonnes of nitrogenous fertilisers (69.8 kg/ha), 0.61 tonnes of phosphate fertilisers (37.7 kg/ha) and 0.47 tonnes of potassium fertilisers (28.9 kg/ha) were applied. In 2015, the quantities applied were 1.06 million tonnes of nitrogenous fertilisers (59.6 kg/ha), 0.41 tonnes of phosphate fertilisers (23.0 kg/ha) and 0.38 tonnes of potassium fertilisers (21.2 kg/ha). For the same period, the fertilised area increased by 10.6%.

Definition of the Indicator:

Consumption of fertiliser products in Spain, differentiated by nutrients (N, P_2O_5 and K_2O). The evolution of usage of each fertiliser, both in absolute terms (total consumption in tonnes) and relative terms (kg/hectare of fertilised area).

Methodological Notes:

- The fertilised surface corresponds to arable, less fallow lands, plus natural meadows.
- 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.

Source:

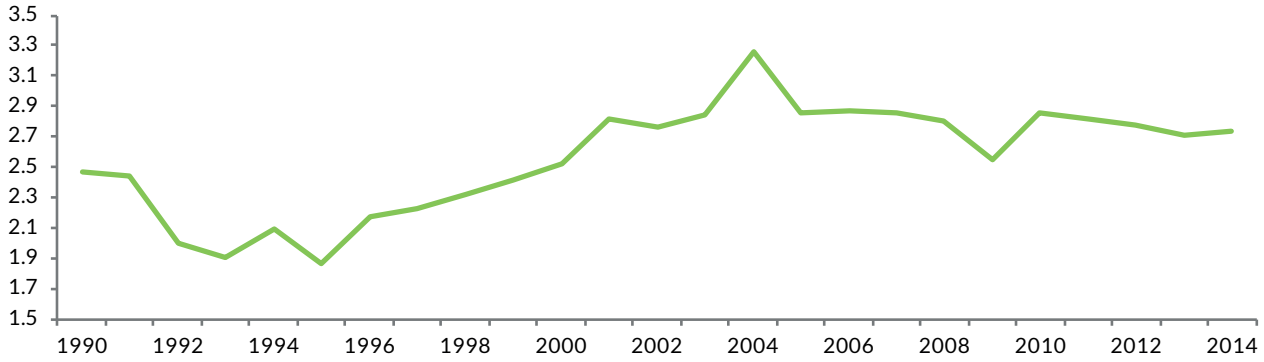
MAGRAMA, 2016. Annual Statistical Report 2015 (2014 and 2015 data) Advance. Chapter 15. Means of Production.

Recommended Websites:

- http://www.magrama.gob.es/es/agricultura/temas/
- http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/productos-quimicos/fertilizantes/
- 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

Consumption of Phytosanitary Products

Consumption of phytosanitary products (kg of active ingredient per ha)



Source: Prepared by the authors using data from AEPLA and MAGRAMA

- ***In 2014, average phytosanitary product consumption increased by 1.3% from 2013, reaching 2.74 kilograms of active ingredients per hectare***
- ***Consumption of herbicides reached 31.6 thousand tonnes in 2014, representing a year-on-year increase of 6.1%***
- ***In 2014, the Canary Islands and the Region of Murcia were, once again, the autonomous communities with the highest consumption of phytosanitary products***

Concerns are growing regarding the sustainable use of phytosanitary products and knowledge of the potential dangers that their inappropriate use might mean for the environment and the health of agricultural producers and consumers.

In this sense, many actions are being taken as detailed in the report on the results of the application of the "National Action Plan (PAN, as per the Spanish acronym) for Sustainable Use of Phytosanitary Products, 2014." This year, for example, 250 awareness campaigns were carried out on the sustainable use of phytosanitary products. 2,350 assessors were trained and 1 operations group was established, along with 7 Integrated Pest Management (IPM) projects, and 6 IPM guides were prepared. Moreover, in the aforementioned report it is noted that the Spanish Phytosanitary Surveillance Network reached 3.6 million hectares and boasts 14,000 control points that practically affect 630 cultivations, forest areas and pests.

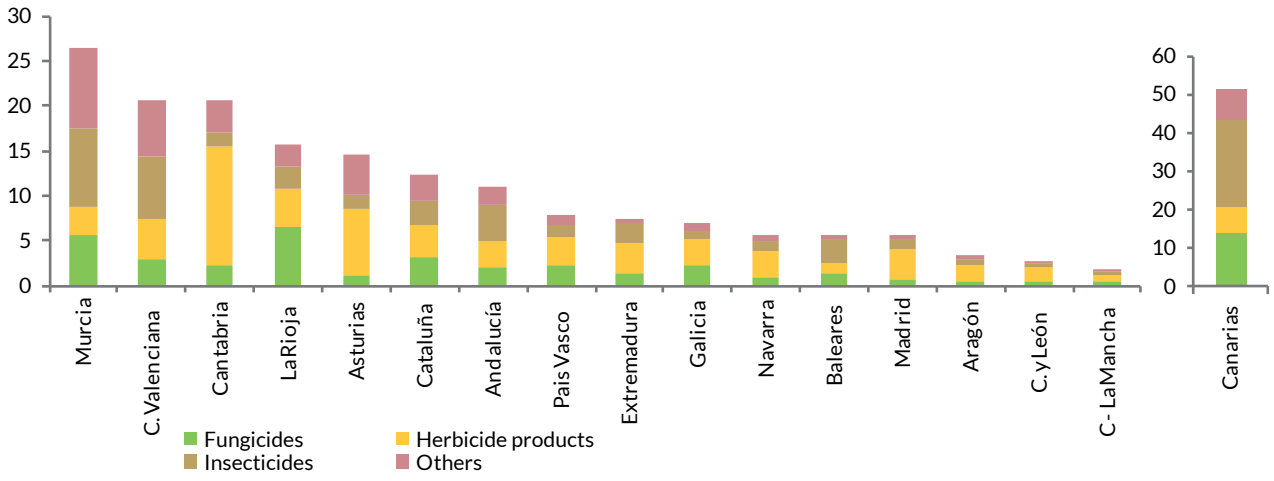
All these activities are aimed at improving the use of these products, which rose by 1.3% in 2014 compared to the previous years, reaching 2.74 kilograms of active ingredient per hectare.

According to the data provided by the Trade Association for Plant Protection (AEPLA, as per the Spanish acronym), in 2014 consumption of herbicides (which represents 31.4% of all phytosanitary consumption) grew by 6.1% from of 2013; use of insecticide, nematocides and acaricides (29.5% of the total) experienced an annual

increase of 4.5%, and fungicides (20.4%) grew by 6.3%. Consumption of the remaining products, which include rodenticides, molluscicides and helicides among others, increased by 1.6% in the final year and accounted for 18.7% of all phytosanitary products consumed in 2014.

In this regard, in 2014 those regions with the highest consumption levels of phytosanitary products per hectare were the Canary Islands, with 51.2 kg/ha, followed by Murcia (26.4 kg/ ha), Cantabria (20.7 kg/ha) and the C. Valenciana (20.5 kg/ha), whereas the regions with the lowest consumption were Castile-La Mancha (1.9 kg/ ha), Castile and León (2.6 kg/ha) and Aragón (3.5 kg/ha).

Phytosanitary product consumption. Year 2014 (kg/ha)



Source: Prepared by the authors using data from AEPLA and MAGRAMA

Definition of the Indicator:

Consumption of phytosanitary products per active ingredient per hectare in Spain, as a whole and in terms of groups: herbicides, insecticides, fungicides, etc.

Methodological Notes:

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).

Source:

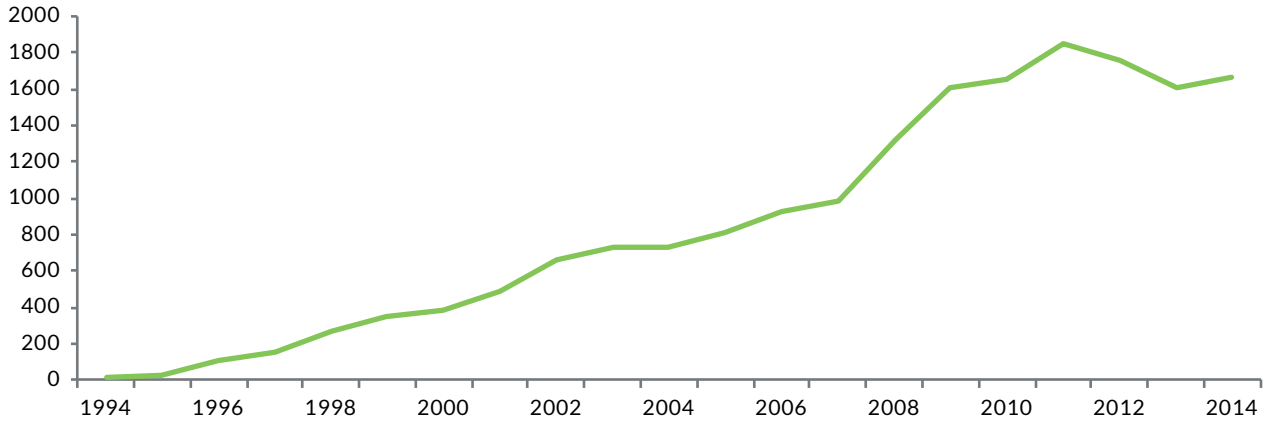
- Phytosanitary products: Trade Association for Plant Protection (AEPLA, as per the Spanish acronym)
- Treated areas:
  - Survey on Crop Areas and Yields (ESYRCE, as per the Spanish acronym), 2014. Ministry of Agriculture, Food and Environment.
  - Annual Statistical Agri-food Report, 2014. Ministry of Agriculture, Food and 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/estadistica/temas/publicaciones/anuario-de-estadistica/default.aspx

Organic Farming

Area dedicated to organic farming (thousands of hectares)



Source: MAGRAMA

- ***In 2014, the area used for organic agriculture grew by 3.3% and is now 1,663,189 ha***
- ***87.1% of this area is certified***
- ***With 51.3%, Andalusia is the Autonomous Community with the largest area dedicated to organic agriculture***
- ***The number of producers (primary activity) grew by 3.3%, reaching 30,602 operators in 2014***

Thanks to its progressive development from the very beginning, Spain occupies first position in the European Union for having an area dedicated to organic production.

The report "Organic Farming in Spain. Statistics 2014" compiles statistics on the development of these practices, which have experienced an increase of 3.3% over the last year, reaching 1.663,189 ha. Of these, 87.1% were certified, 4.4% under conversion and 8.5% in their first year.

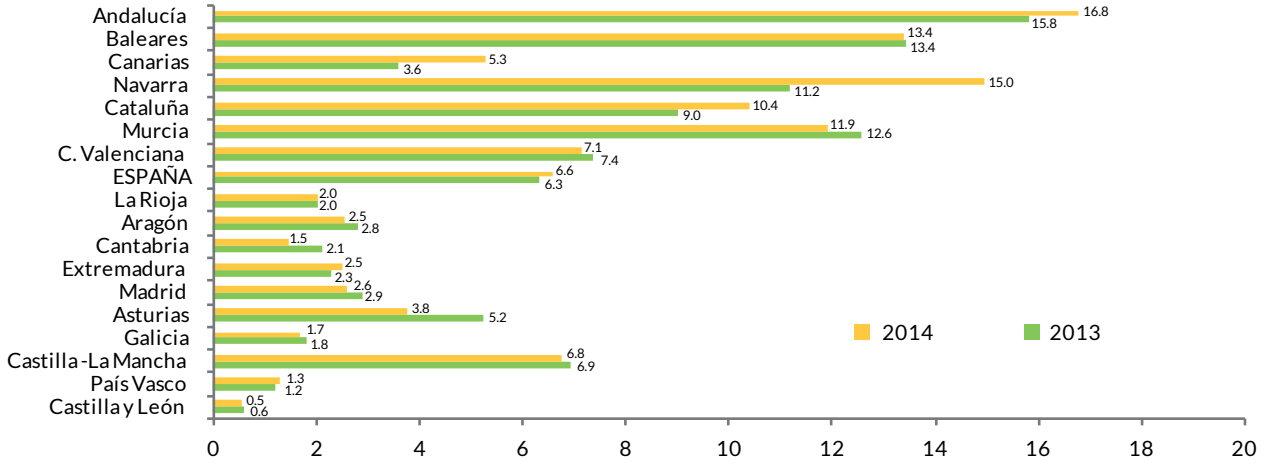
Similarly, the number of organic producers (primary activity) increased by 3.3% in 2014 to reach 30,602 operators. The number of producers and/or processors (secondary activity) increased to a greater extent, by 8.4%, to reach 3,082 operators in 2014.

In terms of production trends in organic agriculture in 2014, the area dedicated to permanent grassland occupied 820,285 ha (49.3% of the total), the area dedicated to permanent cultivations was 490,308 ha (29.5%), the area occupied by arable land was 231,682 ha (14%) and 11,809 ha of land was dedicated to the cultivation of vegetables (0.7% of the total). In 2014, fallow land accounted for 108,939 (6.6%).

In terms of distribution by autonomous community of an area dedicated to organic agriculture in absolute terms, Andalusia, with 853,494 ha, is the region with the largest area dedicated to organic agriculture (51.3%),

followed by Castile-La Mancha with 284,599 ha (17.1%) and Catalonia with 105,806 ha (6.4%). Also, in relative terms and in relation to the utilised agricultural area (SAU), Andalusia is the autonomous community with the highest percentage, with 16.8%, followed by Navarre (15.0%) the Balearic Islands (13.4%) and the Region of Murcia (11.9%).

Area dedicated to organic farming as a proportion of utilised agricultural area (%)



Source: Prepared by the authors using data from MAGRAMA

The autonomous communities that experienced the greatest increases in 2014 were the Canary Islands (46.4%), Navarre (25.9%) and Catalonia (15.2%); while Cantabria (-31.2%) and Asturias (-28.3%) were the autonomous communities that experienced the largest reduction in organic area.

Definition of the Indicator:

This indicator describes the evolution of the area dedicated to organic agricultural production.

Methodological Notes:

- Utilised Agricultural Area (UAA): Amount of farmland and permanent grassland 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 comprises the Regulation for the General Designation of Organic Farming and, 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 of 20.7.2007].
- Organic agriculture is a productive system characterised by not using synthetic chemical products, thus allowing the fertility of the land to be maintained and foods of the highest quality to be maintained. It is a production system with a growing importance in the Spanish agri-food system.

Source:

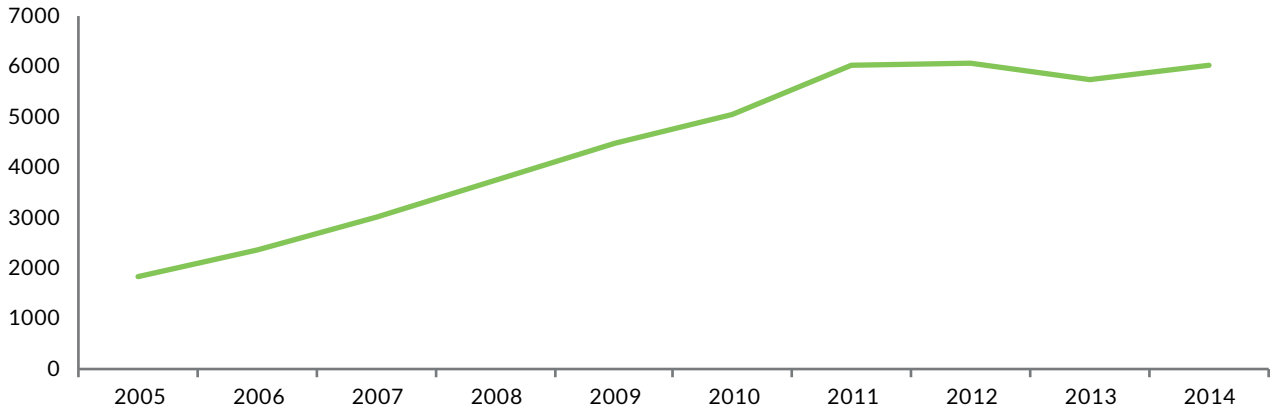
- Ministry of Agriculture, Food and Environment, 2015. Organic Farming Statistics 2014. Sub-directorate General for Differentiated Quality and Organic Farming.
- Ministry of Agriculture, Food and Environment, 2015. Survey on Crop Areas and Yields. General Technical Secretariat.

Recommended Websites:

- http://www.magrama.gob.es/es/alimentacion/temas/la-agricultura-ecologica/

Organic Livestock Farming

Number of organic livestock holdings



Source: MAGRAMA

- *The number of organic livestock holdings increased by 3.1% in 2014 compared to the previous year*
- *Almost half of organic livestock holdings in Spain are beef cattle holdings, with much smaller numbers for other types of organic livestock holdings*
- *Almost 60% of all organic livestock holdings are concentrated in a single autonomous community: Andalusia*

Organic production in Spain is more orientated towards products of vegetable origin than those of animal origin. The "Strategy to Support Organic Production" established that, in 2012, 86% of the total value of organic production was accounted for by products of vegetable origin as opposed to 14% from products of animal origin. Like organic agriculture, however, organic livestock breeding shows a clearly positive trend.

According to the report "Organic Farming in Spain. Statistics 2014," there are 6,078 organic livestock holdings in Spain, 3.1% more than in the previous year. However, this number is 0.4% lower than that reached in 2012, when 6,104 livestock holdings of this kind were recorded.

Number of organic livestock holdings

	2013	2014	2014/2013 Change (%)
Bovine	2,787	2,874	3.1
Ovine	1,621	1,721	6.2
Caprine	604	647	7.1
Porcine	137	132	-3.6
Poultry	223	260	16.6
Beekeeping	195	155	-20.5
Equine	238	285	19.7
Other livestock	3	4	33.3
Total	5,808	6,078	4.6

Source: MAGRAMA

In 2014, of the 6,078 organic livestock holdings registered, 2,874 were bovine (47.2% of the total), and of those practically all (2,798 holdings) were primarily concerned with the production of meat. They were followed by ovine holdings, numbering 1,721 (28.3%) and caprine (647 holdings, 10.6% of the total), with these, as in the previous case, fundamentally dedicated to meat production (1,680 in the case of ovine and 509 in the case of caprine holdings).

Bovine, ovine, caprine, poultry and equine holdings all saw positive increases, at 3.1%, 6.2%, 7.1%, 16.6% y 19.7% respectively, while porcine and bee-keeping holdings experienced a decline of 3.6% and 20.5% respectively.

In terms of autonomous communities, Andalusia stands out in 2014 with 3,521 holdings (57.9% of all national holdings) and an annual growth of 6.4% in 2013. It is followed some distance behind by Catalonia with 772 holdings (12.7% of the total) and an increase of 15.7%, Castile-La Mancha with 304 holdings (5.0% of the total) and an increase of 9.4% and the Balearic Islands with 293 holdings (4.8% of the total) and a decrease of 7%. At the other extreme are autonomous communities with a lower number of this type of holding, which in 2014 were: Murcia (2 holdings) La Rioja (9 holdings) and the Community of Madrid (17 holdings).

Definition of the Indicator:

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

Methodological Notes:

The legislative framework that regulated agricultural and livestock activities in Spain changed in 2014 with the passing of Royal Decree 833/2014 of 3 October, establishing and regulating the General Register of Organic Operators and creating the Coordination Board for Organic Production. This law replaces Royal Decree 759/1988 and Royal Decree 1852/1993, which until then governed this area in Spain.

In the EU, it is governed by Council Regulation (EC) No. 834/2007 of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No. 2092/91 and Commission Regulation (EC) No. 889/2008 of 5 September 2008 laying down detailed rules for the implementation of Council Regulation (EC) No 834/2007 on organic production and labelling of organic products with regard to organic production, labelling and control.

Source:

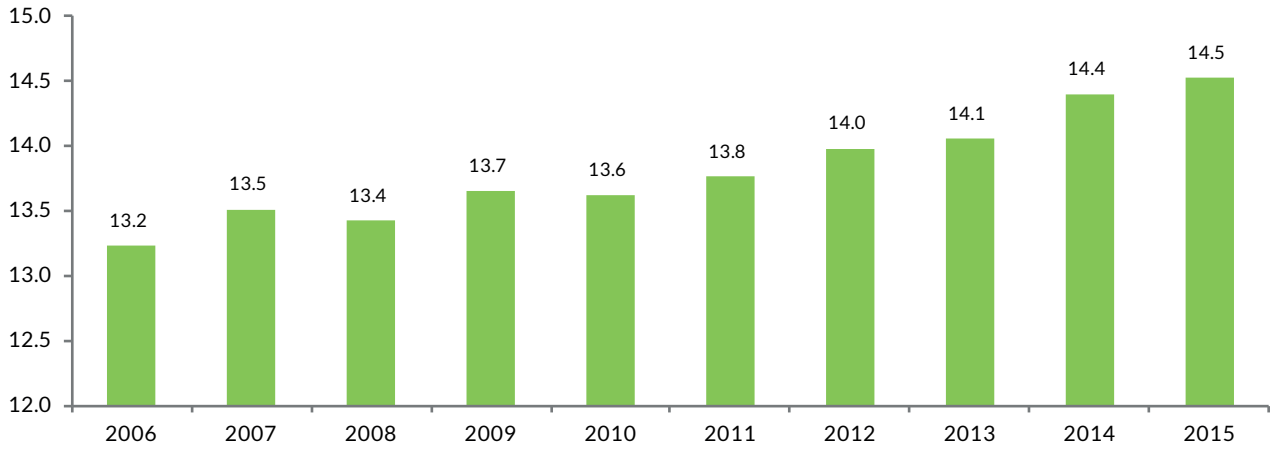
Ministry of Agriculture, Food and Environment, 2015. Organic Farming Statistics 2014. Sub-directorate General for Differentiated Quality and Organic Farming.

Recommended Websites:

- http://www.magrama.gob.es/es/alimentacion/temas/la-agricultura-ecologica/

Irrigated Area

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



Source: MAGRAMA

- *The irrigated area represented 14.5% of the total national agricultural area in 2015*
- *In 2015, the irrigated area grew in all autonomous communities in relation to 2014*
- *Andalusia remains the autonomous community with the largest irrigated area in absolute terms (29% of that national total), while the C. Valenciana has the highest percentage in terms of autonomous agricultural area (40.2%)*

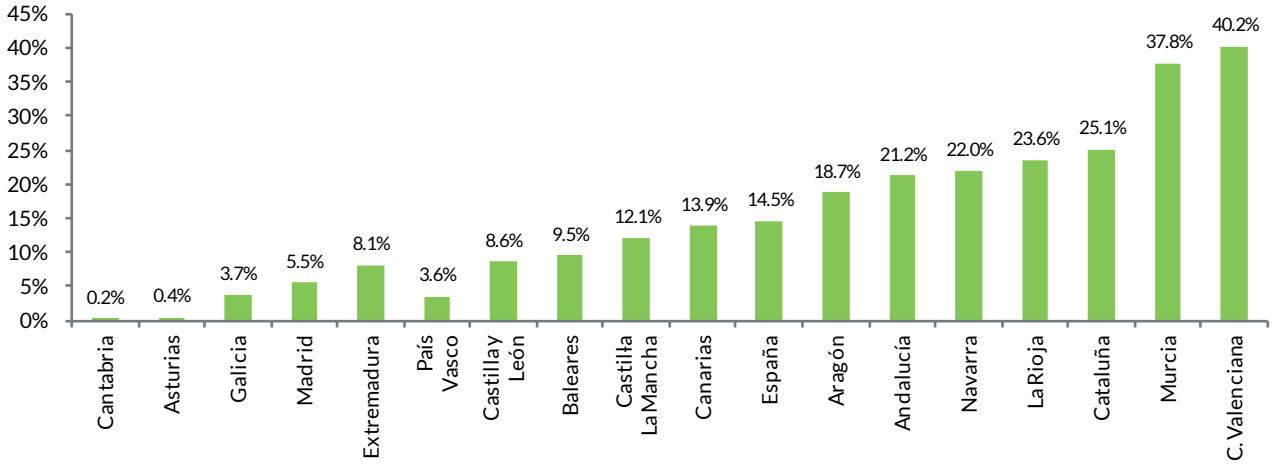
Irrigation plays an important role in Spain's agricultural economy, both at a macro and microeconomic level. Its influence on the balance of agricultural trade, due to the principal export of fruit and vegetables, and the improvement in profitability for many farmers, has been evident since the end of the past century.

Within this framework, the continuous improvement in the incorporation of environmental variables to the irrigation sector will prove key to guaranteeing long-term sustainability.

In the development of surface irrigation in respect of total agricultural area over the last decade, it can be observed how, in general terms, at a national level, there has been a progressive increase in irrigated surface, which has gone from 13.2% of the total agricultural area in 2006 to 14.5% in 2015. In this period, irrigated hectares have grown by approximately 350,000, going from 3,319,790 ha in 2006 to 3,669,287 ha in 2015.

In terms of the ratio of irrigated area to total agricultural area by autonomous community in 2015, the regions with the highest percentage of irrigated area are: the C. Valenciana with 40.2%, Murcia with 37.8%, Catalonia with 25.1% and La Rioja with 23.6%. In these communities, the number of hectares devoted to irrigation reached 287,145 ha, 187,737 ha, 255,232 ha and 52,338 ha respectively. In the same year, the autonomous communities with the lowest irrigated area as a percentage of the total agricultural area were Cantabria (0.2%) and Asturias (0.4%).

Irrigated area to total agricultural area (%). Year 2015



Source: MAGRAMA

In accordance with data from the Survey on Crop Areas and Yields (ESYRCE, as per the Spanish acronym) 2015, the main irrigation systems were the localised system (1,792,911 ha, 49.3% of the national irrigated area) and the gravity system (applied on 978,125 ha, 26.9% of the total). Both systems together account for more than 77% of the total irrigated area. These are followed by sprinkler irrigation systems (15.3%) and automated irrigation systems (8.4%), covering 558,834 ha and 306,272 ha of the irrigated area respectively. With regard to this variable, one must highlight the increase over recent years of irrigated surface through the localised irrigation system (much more efficient in terms of water consumption) to the detriment of the gravity system (a system which involves a much greater consumption of water).

The groups of crops requiring the largest irrigated area in 2015 were grain, with 1,009,149 ha (27.7% of the total national irrigated surface), followed by olive trees (748,708 ha irrigated area, 20.6% of the total), vines (365,767 ha, 10.1% of the total), non-citrus fruits fruit (290,677 ha, and 8.0% nationally) and citrus fruits (278,265 ha, 7.6% of the total).

Definition of the Indicator:

The indicator shows the evolution of the ratio of the irrigated agricultural area and the total national agricultural area, as a percentage. It also provides these data at the autonomous community level.

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.
- The total agricultural area considered is the sum of the area of all land under cultivation, fallow land and greenhouses and family allotments.
- The irrigated area has been obtained from the ESYRCE Survey, after deducting irrigated forest area from the irrigation geographic area, and then adding the area of greenhouses.
- As regards the values stated in relation to this kind of irrigation system for the calculation of the irrigated area, the area comprised of meadows and pastures has been excluded, as well as the irrigated area for black poplars (methodology note on the Survey on Crop Areas and Yield. Report on Irrigation Systems in Spain 2015).

Source:

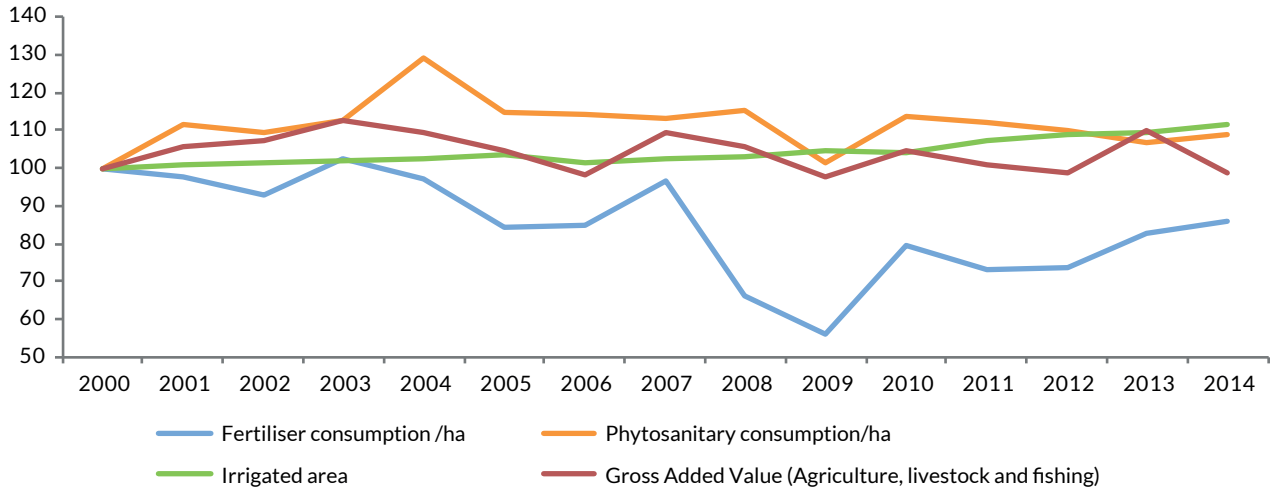
Ministry of Agriculture, Food and Environment, 2015. Survey on Crop Areas and Yields. Report on Irrigation Systems in Spain 2015. General Technical Secretariat.

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

Environmental efficiency in agriculture. Index: Year 2000 = 100



Source: Prepared by the authors using data from MAGRAMA, AEPLA and the INE

- ***Domestic agriculture has room for improvement in terms of becoming a more environmentally efficient sector, so that its growth in economic terms does not go hand in hand with an increase in the use of natural resources or chemical products***

As it is essential for food production and, therefore, for the well-being of the population, agriculture is also a sector of the economy that puts significant pressure on the environment due to its consumption of resources and the use of chemical compounds, among other issues.

Increasing efficiency in the use of resources and reducing the dependence of agrochemicals, while at the same time maintaining agricultural production, is necessary to make agriculture a more efficient and sustainable sector of the economy. This indicator helps us see if progress is being made in this direction. The graphic shows the evolution of the use of fertilisers and phytosanitary products over the last 15 years, along with the area under irrigation, a practice which brings with it other pressures such as greater consumption of water and energy. The performance of these variables is jointly present with the variation over the same period of the Gross Value Added (GVA) of the agricultural sector.

According to the graphic, despite the fact that Gross Value Added barely varied between 2000 and 2014, its rate is down 1.1% for this period. In the same period the area dedicated to irrigated cultivation has experienced continuous growth, mild but sustained: between 2000 and 2014, the increase registered in irrigated area was 11.4%, 2.1% for the last year.

For this period there was also a certain reduction in the use of fertilisers, with use of fertiliser per hectare falling 14.2% between 2000 and 2014, albeit there being a year-on-year rise of 3.8% for this figure between 2013 and 2014. Consumption of phytosanitary products also experienced positive growth in the last year (1.6% between 2013 and 2014), and also over the last 15 years (11.4% between 2000 and 2014).

All of these data would appear to indicate that there is sufficient room for improvement for Spanish agriculture to become more efficient, in which the economic growth of the sector can be decoupled from the intensive and increasing use of natural resources and from the use of chemical products to increase food production.

Definition of the Indicator:

The indicator shows the relation between the evolution of the Gross Value Added (GVA) of agriculture, livestock and fisheries and the evolution of consumption variables for phytosanitary products, fertilisers 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 performance is considered positive when the trend in the sector's economic growth is detached (contrary and divergent) from that of the pressures it exerts on the environment.
- When analysing the evolution of fertiliser consumption, it is necessary to keep in mind that the variable is dependent upon the climate variables of the agricultural year, as the volume of precipitation, the occurrence and duration of droughts and freezes, etc. determine in great measure the use of these products and their market price.

Source:

- Gross Value Added: Spanish National Institute of Statistics (INE). Spanish National Accounting. Base 2010. Gross Domestic Product at market prices and components thereof. Current prices. Accounting series 1995-2014.
- Fertiliser consumption: Annual Statistical Report, 2014. Ministry of Agriculture, Food and Environment.
- Consumption of phytosanitary products: Trade Association for Plant Protection (AEPLA, as per the Spanish acronym)
- Irrigated area: Survey on Crop Areas and Yields (ESYRCE, as per the Spanish acronym), 2015. MAGRAMA

Recommended Websites:

- http://www.magrama.gob.es/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

2.12 ENERGY

On 25 February 2015, the EU Commission presented its first legislative proposals on the Energy Union for the implementation of the framework for action on climate change up to the year 2030. These proposals appear in the "Energy Union Package" and are aimed at guaranteeing safe, sustainable, competitive and accessible energy for Europe and its citizens. The set of measures refers to the five main areas (security of energy supply, integration with domestic market, energy efficiency and the de-carbonizing of the economy and the Energy Union at the service of research, innovation and competitiveness), and consists of three communications:

- A strategic framework for the Energy Union detailing the objectives of the Energy Union and the specific measures to reach them.
- A communication establishing the vision of the EU for the new global agreement on climate change approved in Paris in December 2015.
- A communication establishing the measures necessary to reach the objective of 10% of electricity interconnections by 2020.

On 4 March 2015 an important meeting took place in Madrid between Spain, France, Portugal, the European Commission and the European Investment Bank (EIB) in relation to European energy interconnections and its financing through European funds. The meeting culminated in the signing of the Madrid Declaration, establishing a roadmap towards achieving interconnections of up to 8,000 MW in capacity with France, allowing for the harmonisation of market prices and resolving many of the problems we have relating to energy isolation.

On 6 May 2015, a number of assistance programmes from the Ministry of Industry, Energy and Tourism came into force for energy efficiency and energy saving projects. They are assistance programmes managed by the Institute for Diversification and Economies of Energy (IDAE, as per the Spanish acronym) financed by the National Energy Efficiency Fund (FNEE, as per the Spanish acronym) and the Building Energy Refurbishment Programme (PAREER-CRECE, as per the Spanish acronym). Millions of euros have been invested in energy refurbishment of buildings, transport, SMEs and large companies in the industrial sector, municipal street lighting, the rail sector and, finally, desalination plants, reaching a total budget of € 413,216,421.

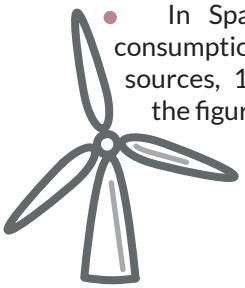
On 16 October 2015, the Council of Ministers approved the Energy Plan: a development plan for the electrical energy transport network 2015-2020 with the principal objective of guaranteeing security of supply, introducing environmental criteria that are integrated to the plan from the beginning, along with energy efficiency criteria. The document contains those infrastructures necessary to guarantee security of supply on the 2015-2020 planning horizon. The estimate for investment associated with electrical infrastructure foreseen on the 2020 horizon is 4,554 million euros, with an average investment volume of 759 million euros, of which 143 million euros are expected to be recovered from the European Regional Development Fund funds over the same period. These direct assistance and support programmes for financing energy saving and efficiency projects are entered in the framework of the National Energy Efficiency Action Plan 2014-2020, which allows Spain to comply with saving objectives from the Energy Efficiency Directive 2012/27/EU, while at the same time providing important stimulus for investment and employment.

Evolution of Primary Energy Consumption

- Energy demand continued to fall in 2014. The reduction in primary consumption in respect of 2013 affected natural gas and petroleum.
- During the period 2000-2014, the volume of waste deposited decreased by 5.1%.
- For the same period, per source of energy, coal suffered the greatest reduction, at 44.5%, and renewable energies grew more acutely at 158.21%.

Power generation with renewable resources

- During the fifteen year period from 2000 to 2014, power generation tripled, although in 2014 it fell 1.4% on the previous year totalling 114,069 GWh.
- Biomass was the technology that suffered the sharpest decrease in 2014, falling 7.8%, while solar thermoelectric energy increased its power generation the most, with an increase of 14.3%, both figures compared to 2013.
- In Spain, 37.8% of total energy consumption comes from renewable sources, 1.1 percentage points above the figure for 2013.

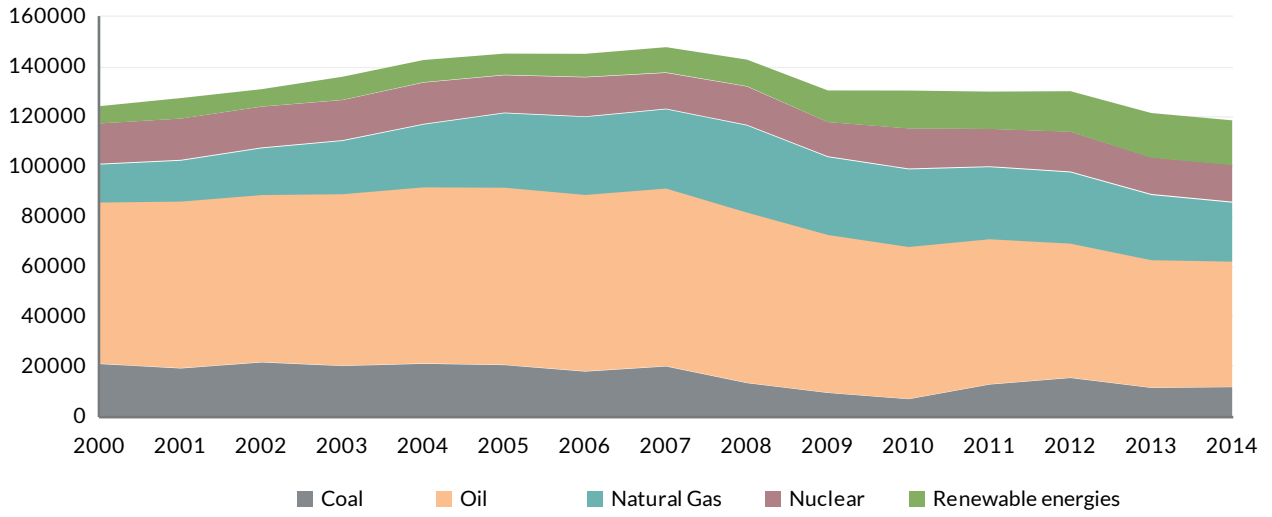


Environmental efficiency in the energy sector

- Final energy intensity in Spain during the fifteen-year period 2000-2014 has fallen 22.13%, to 83,031 ktoe.
- Primary energy intensity also fell in 2014 by 1% in respect of 2013 and 21.26% in respect of the year 2000.
- Spain's energy dependency increased 2.5 percentage points in respect of the previous year in 2014 to 72.9%.

Evolution of Primary Energy Consumption

Primary energy consumption (ktoe)



Source: MINETUR

- *Energy demand continued to fall in 2014. The reduction in primary consumption in respect of 2013 affected natural gas and petroleum*
- *During the period 2000-2014, primary energy consumption decreased by 5.1%*
- *For the same period, per source of energy, coal suffered the greatest reduction, at 44.5%, and renewable energies grew most acutely at 158.21%*

In 2014, consumption of primary energy in Spain was 118,389 kilotonnes of oil equivalent (ktoe), down 2.2% on 2013 (120,997 ktoe). This decrease was greatly impacted by the change in the structure of electricity generation, having produced greater changes in relation to coal-based generation, which rose 2.5% to 11,639 ktoe, and natural gas, demand for which declined by 9.6% to 23,662 ktoe.

Continuing with the trend of previous years, the contribution of renewable energies continues to grow, owing basically to hydroelectric, wind and solar generation, although this increase is not as sharp as in previous years. In 2014, hydroelectric energy accounted for 6.2% more than in 2013, thus maintaining average levels reached the previous year after particularly dry years in 2011 and 2012.

Primary energy was structured as follows in the year 2014: almost half, just under 43% was petroleum, 20% was natural gas, almost 10% coal, 12.6% nuclear and, finally, the use of renewables continued to grow reaching 15.03% of the structure due to the increase in electrical generation, especially in hydroelectric and thermo-solar energy.

In terms of the historical evolution of this indicator, during the period covering the series analysed, from 2000 to 2014, there has been a reduction in consumption of primary energy of 5.1%, from 124,625 to 118,389 ktoe.

During the first seven-year period there was a continuous increase in the consumption of primary energy, reaching 147,359 ktoe in 2007, 18.24% more than in the base year. It is from 2008, the year the financial crisis began, that we can see how demand begins to fall steadily up to 2014, with a reduction of 19.7% from 2007 to 2014.

Broken down by energy sources, during the period analysed (2000-2014), renewable resources have increased more than any other energy source with 158.2% growth, which has been continuous with slight downward rebounds in the years 2002, 2004 and 2011. At the other extreme, coal is the source that has suffered the most acute reduction, 44.5%, experiencing its sharpest decline in the three-year period from 2008 to 2010 with a 65.95% fall.

In relation to the remaining sources; natural gas and non-renewable resources, these also saw notable increases, 55.5% and 77.39% respectively, both seeing the largest increase during the period 2000-2008: 129.38% and 185.2% respectively before then. This coincided with the onset of the financial crisis; both suffered falls of around 35% between 2008 and 2014. On the contrary, petroleum and nuclear sources suffered declines of 22.3% and 7.9% respectively. In the case of petroleum, the first half of the period from 2000-2007 saw an increase of 10.1% while the 2008-2014 period saw a fall of 29.4%. Nuclear, however, remained stable over the first years of the period, only to experience several ups and downs between 2005 and 2012 and a final fall in 2013 and 2014 in respect of the year 2012.

Definition of the Indicator:

This indicator reflects the evolution of primary energy consumption, which is obtained as a result of the sum of final energy consumption, consumption in the energy sector (own use and use for transformation, especially in electricity generation and petrol refineries) and losses.

Methodological Notes:

- Primary energy is that obtained directly from natural sources. There exist different sources of primary energy, depending on the capacity of regeneration: those proceeding from fossil fuels, non-renewables (carbon, petrol, natural gas and uranium), and renewables (hydroelectric, wind, solar and biomass).
- The data for consumption of primary data includes the electricity balance, understood as the difference between imports and exports of electricity.

Source:

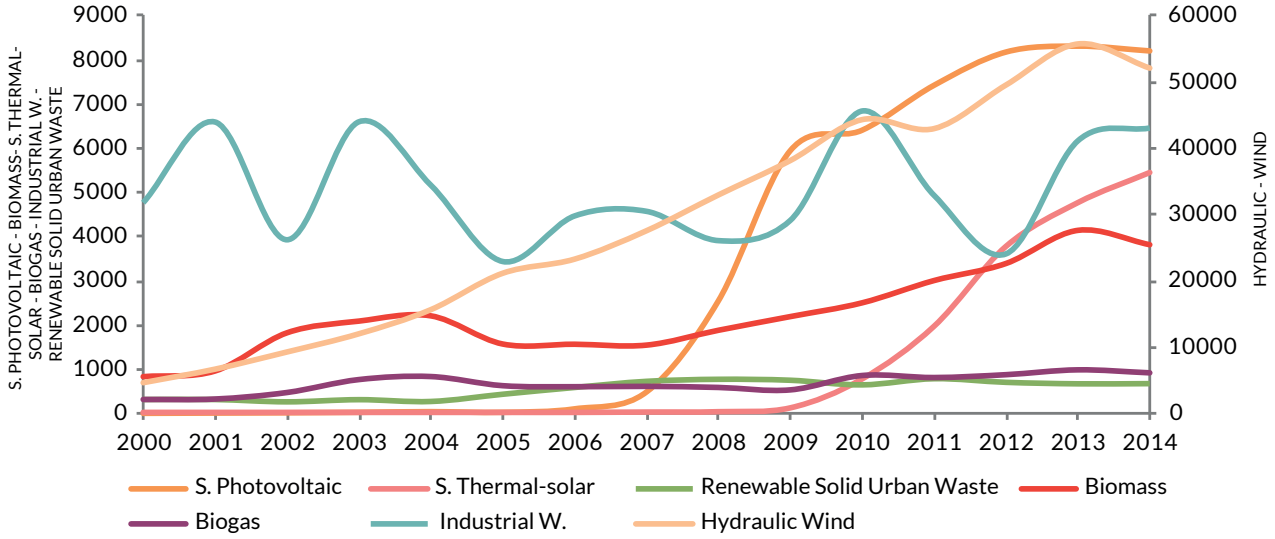
- MINETUR
- Spanish Energy Club/ Spanish Institute of Energy. 2014 Energy Balance and perspectives for 2015.

Recommended Websites:

- http://www.minetur.gob.es/energia/es-ES/Paginas/index.aspx
- www.enerclub.es

Power generation with Renewable Resources

Power generation with Renewable Resources (GWh)



Source: IDAE

- *During the fifteen-year period from 2000 to 2014, power generation tripled, although in 2014 it fell 1.4% on the previous year totalling 114,069 GWh*
- *Biomass was the technology that suffered the sharpest decrease in 2014, falling 7.8%, while solar thermoelectric energy increased its power generation the most, with an increase of 14.3%, both figures compared to 2013*
- *In Spain, 37.8% of total energy consumption comes from renewable sources, 1.1 percentage points above the figure for 2013*

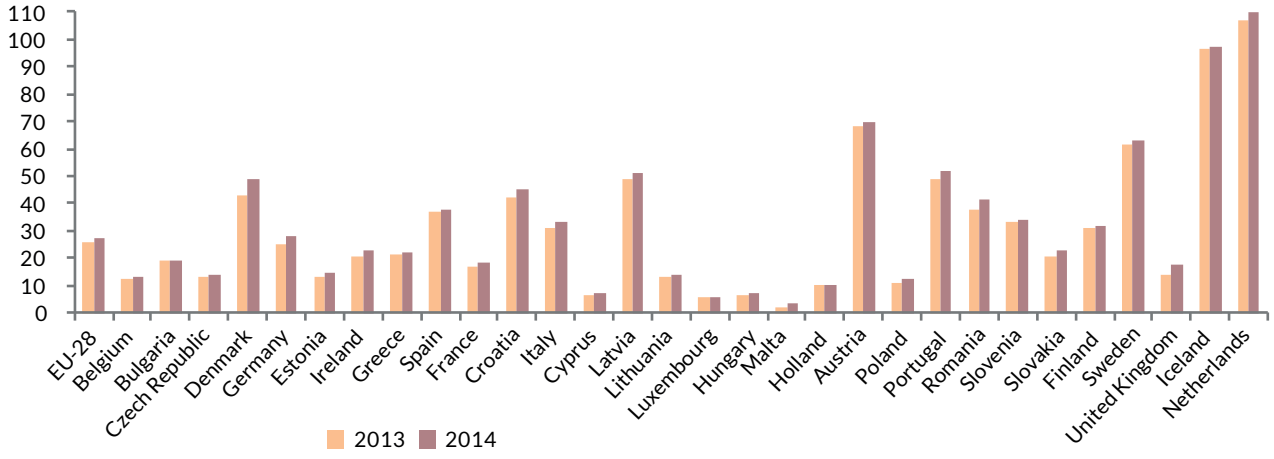
The production of electricity with renewable energy fell 1.4% in the year 2014 compared to the previous year (1,525 GWh less), to 114,069 gigawatt-hours (GWh), due principally to the 6.5% fall in wind production. Despite this slight contraction, in relative terms renewable energies played an important role in 2014 in gross energy production and increased their participation by more than half a percentage point in respect of 2013, reaching a quota of 39.6% in 2014.

Establishing a comparison for the fifteen-year period 2000-2014, it can be observed that power generation multiplied three-fold, with an increase of 197.6%, passing from 38,319 GWh in 2000 to 114,069 in 2014. The largest contribution to this increase came from hydro and wind technologies which, over the last number of years, have been more prolific; solar (photovoltaic and thermoelectric), whose contributions were practically testimonial, are in third and fourth ahead of biomass electricity generation. Closing the list of renewable forms of power generation are biogas and incineration of solid urban waste (SUW), with fairly stable power generation over these years, and industrial waste, which has seen production fall to zero over the last thirteen years.

In terms of technologies, biomass, biogas, wind and photovoltaic all experienced declines in power generation in the year 2014 in relation to 2013, which, jointly, reached 22.4%, corresponding to decreases of 7.8%, 6.7%,

6.5% and 1.3% respectively. At the other end of the scale are solar thermoelectric and hydro renewable technologies, with a joint increase of 22.5%, individual increases of 14.3% and 4.6% respectively and SUW which increased production by 0.5%.

Generation of electricity from renewable sources in Europe
% of gross electricity consumption.



Source: EUROSTAT

According to Eurostat, in Europe in 2014, all countries increased production of electricity from renewable sources on 2013 as a percentage of gross energy, except Bulgaria and Holland, whose figures remained the same. The countries with the highest percentages were: Norway, with 109.6%, Iceland with 97.1%, Sweden with 63.3%, Portugal with 52.1% and Latvia with 51.1%; at the other end, with the lowest percentages of renewable energy in terms of overall consumption were Malta (3.3%), Luxembourg (5.9%), Hungary (7.3%) and Cyprus (7.4%). Denmark, Romania and the United Kingdom are the countries with the highest percentage increases on the previous year at 5.4, 4.2 and 4 respectively. With regard to Spain, in 2014, 37.8% of total electricity consumption came from renewable sources, 1.1 percentage points above the figure for 2013.

Definition of the Indicator:

This indicator reflects the evolution of power generation from renewables over the fifteen-year period 2000-2014.
The European indicator (EUROSTAT) corresponds to the relationship between electricity produced using renewable energies and gross annual consumption of electricity. It measures the contribution of electricity produced from renewable energies to national electricity consumption.

Methodological Notes:

- Electricity produced from renewable energies covers electricity generated from hydroelectric power plants (excluding pumping), wind, solar, geothermal power plants and electricity from biomass/waste.
- Gross national consumption covers gross electricity generation using all fuels (including self-production), plus imported electricity, less imports.

Source:

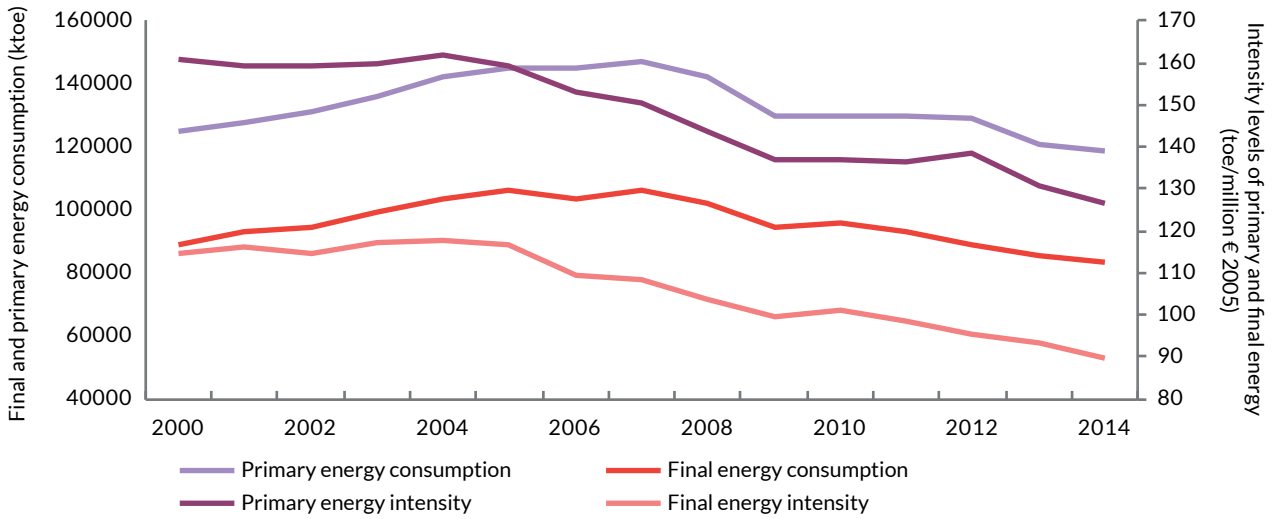
- IDAE. Renewable Energy Statistical Reports 2014.
- EUROSTAT/Main tables/Energy statistics- main indicators.

Recommended Websites:

- http://www.idae.es/index.php/idpag.802/relcategoria.1368/relmenu.363/mod.pags/mem.detalle
- http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tsdcc330

Environmental efficiency in the energy sector

Environmental efficiency in the energy sector



Source: MINETUR - INE

- *Final energy intensity in Spain during the fifteen-year period 2000-2014 fell 22.13%, to 83,031 ktoe.*
- *Primary energy intensity also fell in 2014 by 1% in respect of 2013 and 21.26% in respect of the year 2000.*
- *Spain's energy dependency increased 2.5 percentage points in respect of the previous year in 2014 to 72.9%.*

According to the data from the Ministry of Industry, Energy and Tourism (MINETUR, as per the Spanish acronym), final energy consumption in Spain in 2014 was 83,031 (ktoe), 2.8% down on the previous year and 21.6% down in 2005, the year with the highest consumption of this type of energy of the fifteen-year period subject to study (2000-2014). This can be justified by the economic situation, which also provoked a slowdown in activity in the industrial sector which, in turn, led to a reduction in energy demand.

In terms of final energy consumption from renewable sources, these represent 6.7% of the total, with thermal technologies having increased their activity in 2014, with the exception of the use of useful heat in co-generation with biomass and/or biogas, with significant reductions associated with the lower thermoelectric generation recorded. Therefore, final energy intensity, as reflected in MINETUR's Energy in Spain 2014 publication, fell by 3.98% in relation to 2013 to 89.4 toe/million € 2005, confirming the trend in improved energy efficiency since 2004, the year in which intensity reached its maximum for the period at 117.6 toe/million € 2005, 23.98% more than in 2014.

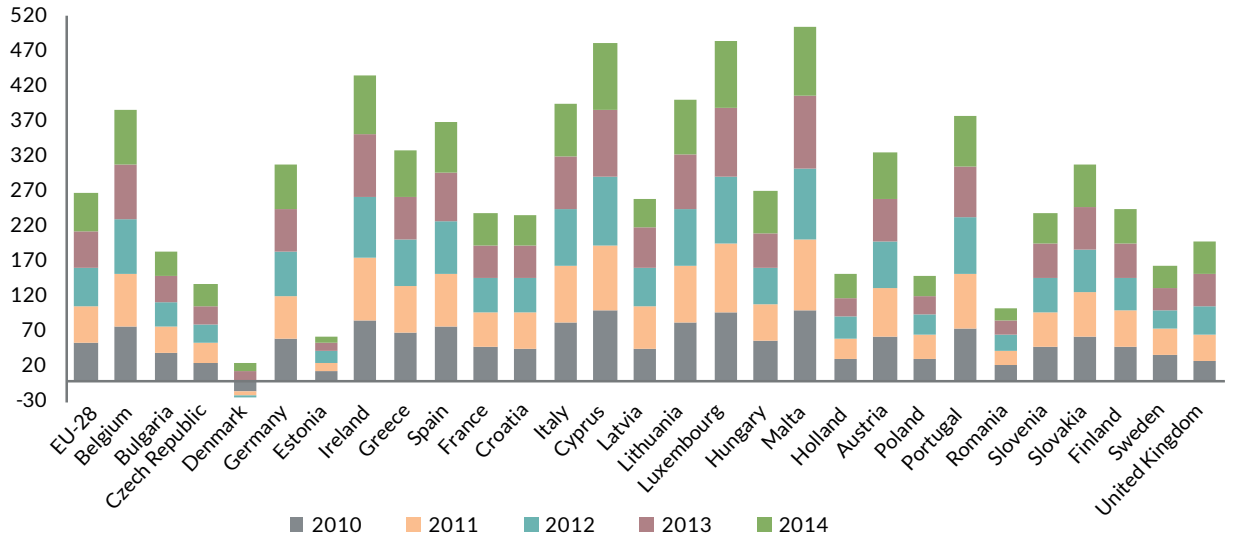
On the other hand, consumption of primary energy in Spain in 2014 was 118,389 ktoe, with a decrease of 2.2% on 2013 and almost 20% on 2007, when primary consumption reached 147,359 ktoe; the reason for the decrease in the last year can be found in the evolution of electricity demand and the structure of electricity

generation, with an important increase in coal and an evident decrease in natural gas. As for the primary consumption figure for 2014, approximately 17,000 ktoe, 14.5%, belonged to renewable technologies, of which three have registered growth: solar technologies (16%), biofuel technologies. (6.7%), and geothermal energy (1.7%).

The corresponding indicator for primary energy intensity has seen more variations than that for final energy, as in addition to economic activity it also depends on hydraulic and wind energy levels of the year in question: in 2014 it fell by 1% in respect of the previous year and 21.26% in respect of the year 2000.

In terms of energy dependency in the EU, we observe that Estonia, with 8.9%, is the country with the lowest accumulated rate, followed by Denmark with 12.8% and Romania with 17%. The case of Denmark is interesting as in the last two years, 2013 and 2014, it saw a notable increase in energy dependency, which in 2005 reached -49.8% and in 2013 13.3%, 63 points higher. At the other extreme, Malta (97.7%), Luxembourg (96.6%) and Cyprus (93.4%) are the countries with the highest levels of energy dependency in 2014, although the three countries reduced their rate by 6.5, 0.4 and 3 points respectively. In the case of Spain, the steady downward trend since 2008 was broken and in 2013 the rate stood at 70.4%, reaching a value of 72.9% in the year 2014, 2.5 percentage points higher.

Level of EU energy dependency (%)



Source: EUROSTAT

Definition of the Indicator:

The indicator describes the environmental efficiency of energy through the analysis of the evolution of primary and final energy intensity (the lower intensity, the more energy efficient), which reflect the relationship between energy consumption and volume of economic activity, and are calculated as the ratio between primary and final energy consumption and Gross Domestic Product (GDP) at market prices. This indicator shows fluctuations, both positive and negative, of the different variables that have a direct impact on the analysis of energy efficiency.

On the other hand, the indicator for energy dependency reflects the extent to which an economy is dependent on imports to cover its energy requirements. This is calculated by dividing net imports by the sum of gross domestic energy consumption and marine deposits (bunkers).

Methodological Notes:

- Energy Efficiency is the set of actions that allow the relation between the amount of energy consumed and the end products and services obtained to be optimised. 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.
- "Final energy" is defined as energy supplied to the consumer for use in the production of goods and services and, as "primary energy," energy available in nature before being converted or transformed into final energy for use (can be calculated as the sum of non-electric final energy consumption in the energy sectors - own consumption and consumption in transformation - and losses).
- Energy consumption on the basis of which the intensities have been calculated includes both energy and non-energy use.
- The intensities included in the indicator are the result of the division of the corresponding energy consumption rates (ktoe) and GDP at market prices, for 2005 expressed in millions of €, provided by the INE (as per the Spanish acronym).

Source:

- MINETUR, Energy in Spain in 2014.
- INE, Gross Domestic Product at market prices. Spanish National Accounting. BASE 2010.
- EUROSTAT. Energy – Main tables – Energy statistics: quantities.

Recommended Websites:

- http://www.minetur.gob.es/energia/balances/Balances/Paginas/Balances.aspx
- http://ec.europa.eu/eurostat/web/energy/data/main-tables
- http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tsdcc310

2.13 INDUSTRY

In the year 2015, the Industrial Production Index grew by 3.2%, with positive rates in all sectors. In particular, the month of December saw an annual increase of 3.7% on the same month the previous year, the twenty-sixth month of consecutive growth, the longest period since the crisis began. During this month, all sectors showed positive growth figures except energy, which showed a decline of 3.5%. The capital goods and intermediate goods sectors, with respective increases of 7.7% and 6.6%, registered the largest increases.

Data from the New Orders Index and the General Turnover Index produced positive results; 2% annual growth in the month of November in the case of the former, reflecting the consolidation of industrial activity, while the latter varied 2.9% in respect of the same month last year.

Similarly, when we turn to qualitative indicators, the Purchasing Managers Index (PMI) for the manufacturing industry registered, in December 2015, a value of 53, prolonging the expansive cycle indicated at the beginning of the year and consolidating the sector's improvement, leaving behind the minimum of 37 points from December 2011.

On 10 July 2015, the first Annual Monitoring Report on the degree of implementation of the measures contained in the Agenda for Strengthening the Industrial Sector in Spain, approved and publicly presented in 2014, was presented before the Council of Ministers. The Agenda contains 97 measures aimed at contributing to the growth of the gross value added of the industrial sector, to the creation of employment and to improving the competitive position of Spanish industry. The

measures are structured across three blocks based on the scope and ambit of action (national and international scope and cross-cutting policies). This sets the basis for industry's adaptation to new global challenges and to changes already underway as a result of the digital transition in the economy, creating new opportunities for business and using the transformative power of technology to increase the competitiveness and productivity of our industry. In terms of the monitoring report, using the data compiled by MINETUR, 98.3% of the measures contained are in the process of implementation, with 46.6% of these measures already implemented. Moreover, the average rate of execution of the measures contained in the Agenda is 82.57%.

In February 2015, in accordance with the provisions of this agenda, two calls were published in the Official State Gazette for the award of financial support: one for investment in industrial manufacturing (Order IET/274/2015), within the framework of public policy for fostering industrial competitiveness, and the other for industrial investment within the framework of public policy for re-industrialisation (Order IET/273/2015).

In line with the provisions of Directive 2014/94/EU, of 22 October 2014, on the deployment of alternative fuel infrastructure, the Council of Ministers of 26 June 2015 approved the Integral Strategy for the Promotion of the Electric Vehicle in Spain 2014-2020, covering vehicles run on hydrogen, electricity, natural gas, liquefied petroleum gas and biofuels. Therein, specific actions are proposed to encourage the adoption of vehicles run on alternative energy, structured into 30 measures to be developed across several areas including infrastructure fostering the acquisition, distribution and awareness, R&D&I, innovation and demonstration of technology and the industrialization of the vehicles. The objective is for Spain to become a leading country in the alternative energy sector across its three strands of vehicles, components and charge and supply infrastructure.

Final energy consumption in the industrial sector

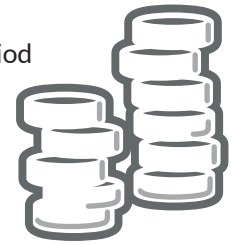
- Final energy consumption on the part of the industrial sector in 2014 represents 23.88% of total annual consumption, at 19,386 ktoe, 3.69% less than the previous year.
- Energy intensity for industry was 19,051 toe/million €, 4.6% lower than in 2013 and 51.3% lower than the year 2000.
- In terms of the European Union, Germany, with 60,715 ktoe is the EU country with the highest final energy consumption, three times that of Spain.

GHG Emissions in the Industrial Sector

- Total GHG emissions have risen by 294,621 kt of CO_2 equivalent, 0.45% higher in 2014 than 2013.
- GHG emissions in the industrial sector in 2014 were 153,871.5 kt of CO_2 equivalent, 0.80% higher than in the previous year, representing 46.7% of the total.
- During the fifteen-year period 2000-2014, GHG emissions from industry fell by 25.3%, with the energy production sector being the biggest polluter with emissions between 45% and 54% of total emissions for industry.

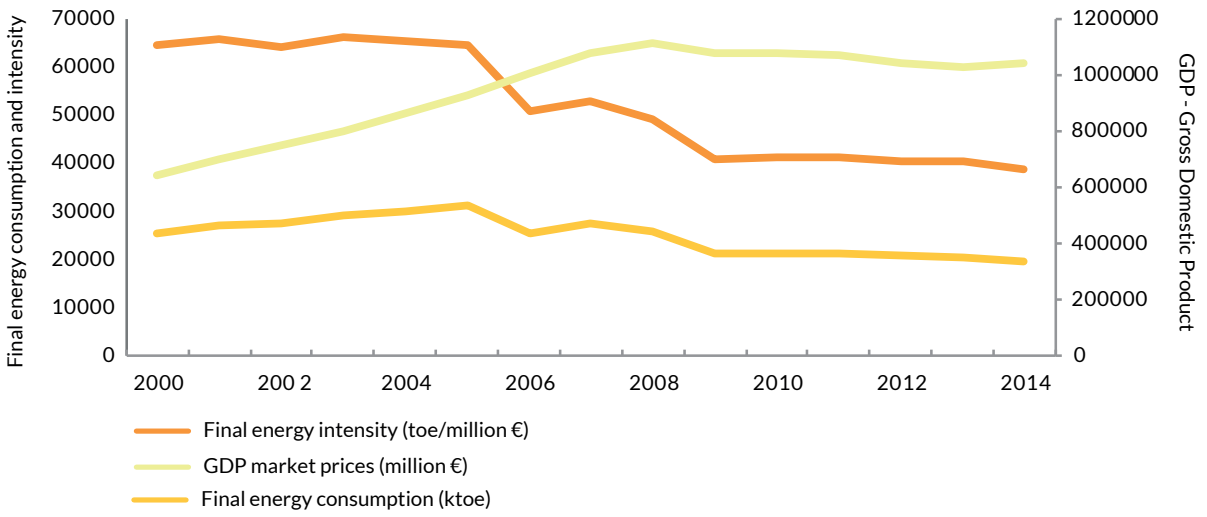
Industry Taxes and Investment in Environmental Protection

- From the year 2004 to 2008 industrial investment in environmental protection increased by 62,1%, only to fall by 63.7% between 2008 and 2013. For the complete period, 2004-2013, this reduction was 41.21%.
- Catalonia, Andalusia, the Basque Country and Castilla y León were the autonomous communities with the highest investment in environmental protection.
- During the six-year period 2008-2013, the industrial sector paid 39,990.5 million euros more in taxes than in environmental investments.



Final Energy Consumption in the Industrial Sector

Final energy consumption and intensity in the industrial sector



Source: MINETUR

- *Final energy consumption on the part of the industrial sector in 2014 represents 23.88% of total annual consumption, at 19,386 ktoe, 3.69% less than the previous year*
- *Energy intensity for industry was 19,051 toe/million €, 4.6% lower than in 2013 and 51.3% lower than the year 2000*
- *In terms of the European Union, Germany, with 60,715 ktoe is the EU country with the highest final energy consumption, three times that of Spain*

In accordance with the data from the Ministry of Industry, Energy and Tourism, during the year 2014, final energy consumption (including non-energy use) on the part of the industrial sector in Spain, 19,836 kilotonnes of oil equivalent (ktoe), which is 23.88% of the total demand for the year and which represents a positive trend in relation to 2013, as a reduction of 3.69%. When we analyse the complete series of data under study, 2000-2014, we can observe that the demand and final energy fell by 21.7%, although the decrease was not a steady one over the period and, in fact, in the first six years (2000-2005), it saw consumption increase steadily by 22.7%, reaching its historic high point in 2005 with 31,103 ktoe.

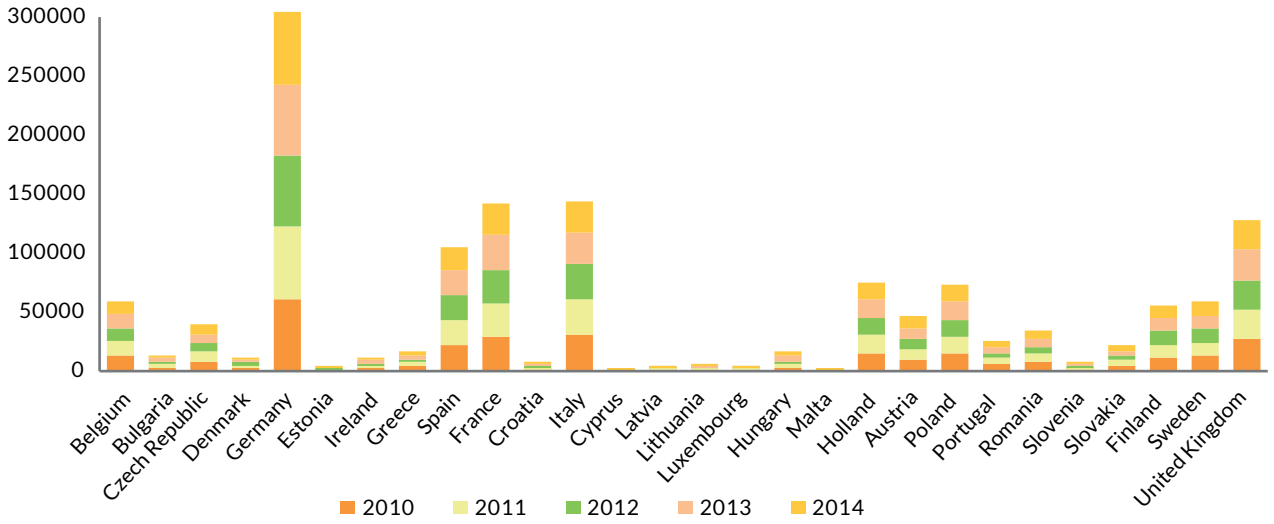
From then on, demand began to fall and, despite a slight bounce back in 2007, it reached the minimum referred to above. This decrease was due, in large part, to the economic situation which, without doubt, gave rise to a sharp slowdown in industrial activity.

Read positively, this reduction in energy consumption results in a lower energy intensity and therefore greater energy efficiency, given the inversely proportional relationship that links both indicators. Thus, based on the results provided by the INE, once GDP is established at market prices at €1,041,160 million, we can observe that the final energy intensity of the industrial sector in 2014 reached 19,051 toe/million €, 4.6% lower than in

2013. Over the fifteen-year period of study, there is a continuous decline, with a slight bounce back in 2007, of 200 toe/million €, to 51.3% below the 2000 level.

In the EU 28, an exhaustive examination of the evolution of final energy consumption in the same period shows us that in 2014 the downward trend that had begun in 2000 returned, having been interrupted by isolated increases in the years 2003, 2010 and 2013. The final industrial energy demand fell 1.4% from the previous year and 17.6% in relation to 2000, to 274,759.1 ktoe, 25.89% of the total final energy consumption.

EU final energy consumption - Industrial sector (ktoe)



Source: EUROSTAT

By country, we see that Germany had the highest final energy consumption in 2014 with 60,715 ktoe, slightly below the figure for 2013; at the other extreme is Malta with 47 ktoe, which also increased consumption on the previous year.

For the year on year increase from 2013 to 2014, two extremes stand out: Estonia, where demand fell 13.61% and Greece where it increased 8.92%. However, by cross-checking the figures for the year 2000 and year 2014 we can see the notable case of Cyprus which reduced consumption by 50%, and, at the other extreme, Latvia, where there was a 37.32% increase.

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.
The indicator relating to data for the EU-28 includes all industrial sectors except energy. The quantities of fuel transformed at electricity stations of industrial auto-producers and the quantities of coke transformed into gas in blast furnaces are not included in the total industrial consumption but in the energy transformation sector.

Methodological Notes:

- Energy Efficiency is the set of actions that allow relations between the amount of energy consumed and the end products and services obtained to be optimised. 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.
- Final energy intensity is the result of the division of the corresponding electricity intensity, expressed in ktoe, and GDP at market prices, expressed in millions of € 2005.

Source:

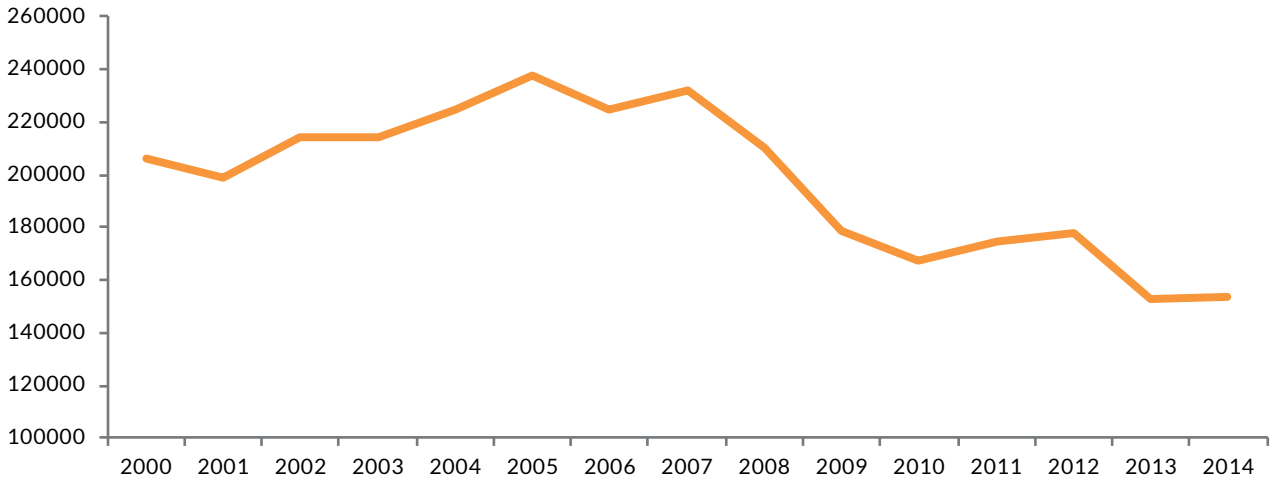
- MINETUR. Sub-Directorate General for Energy Planning and Monitoring.
- EUROSTAT/ energy / data / main tables / energy statistics-quantities / final energy consumption by sector
- INE, Gross Domestic Product at market prices. Spanish National Accounting. BASE 2010.

Recommended Websites:

- http://www.minetur.gob.es/energia/balances/Balances/Paginas/Balances.aspx
- http://ec.europa.eu/eurostat/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=tsdpc320&language=en

GHG Emissions in the Industrial Sector

GHG Emissions in the Industrial sector (kt of CO_2 equivalent)



Source: MAGRAMA

- *Total GHG emissions have risen by 294,621 kt of CO_2 equivalent, 0.45% higher in 2014 than 2013*
- *GHG emissions in the industrial sector in 2014 were 153,871.5 kt of CO_2 equivalent, 0.80% higher than in the previous year, representing 46.7% of the total*
- *During the fifteen-year period 2000-2014, GHG emissions from industry fell by 25.3%, with the energy production sector being the biggest polluter with emissions between 45% and 54% of total emissions for industry*

Total emissions of greenhouse gases (GHG) estimated for the year 2014 were 328,926,2 kt of CO_2-eq, some 0.45%; which shows an increase from the 294,621 kt de CO_2-eq from the year before. Analysed over a longer period of time we can see that these 2014 emissions exceed those recorded for the year 1990 at 42,992 kt of CO_2-eq, some 15%, although below those recorded for the year 2000 at 56,192.56 kt of CO_2-eq, some 14.6% lower. Of these total GHG emissions for 2014, 46.7% come from industry, specifically 153,871.5 kt of CO_2-eq, some 0.80% more than in the previous year.

When comparing the fifteen-year period we observe that industrial emissions fell by 25.3% between 2000 and 2014, going from 206,049.4 to 153,871.5 kt of CO_2-eq, although during this period there were both increases and decreases, making it impossible to establish any continued trend of growth or decline.

Analysing the 2000-2014 period by industrial sub-sectors, we see that the energy production industry was responsible for the highest GHG emissions throughout the period, with percentages of the industrial total between 45% and 54%; in 2014, this industry accounted for 75,726 kt of CO_2-eq, 4.03% more than the previous year and 28.24% less than the year 2000.

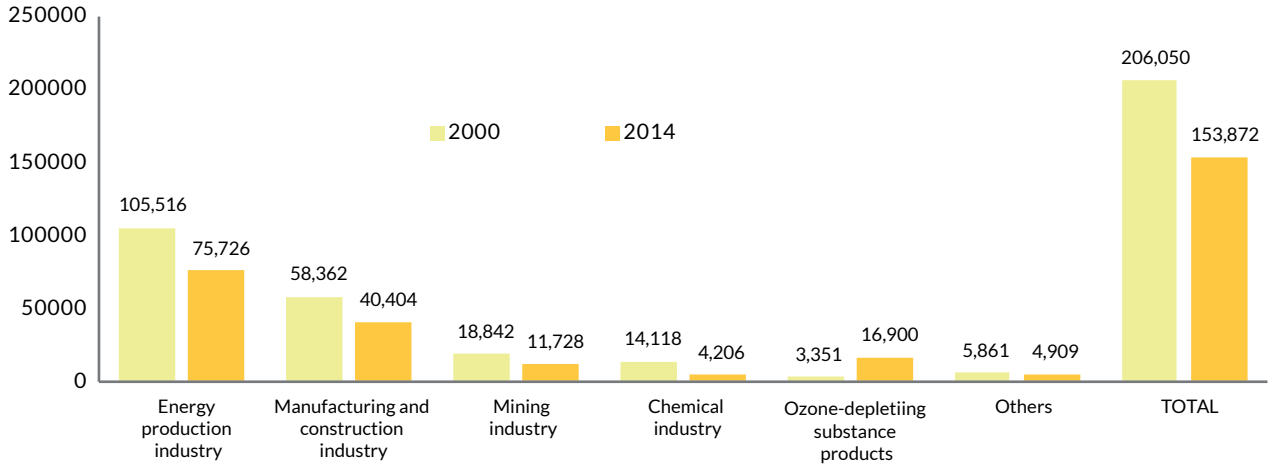
In second place, the manufacturing industry and construction sector was responsible for between 26% and 32% of total industrial emissions for the period, with the lowest emissions recorded in 2014, with

40,403.56 kt of CO_2 equivalent and the maximum in the year 2005 with 69,748.3 of CO_2 equivalent. In 2014 emissions were 30.7% lower than in the year 2000.

Emissions from the mining industry in 2014 were 11,727.9 kt of CO_2-eq, 12.1% above those for 2013 and 37.76% lower than in 2000, with a continued increase during the first seven years and continued decrease from 2008 to 2014.

The chemical industry has undergone continued downturn up to the year 2014, when it was responsible for emissions of 4,205.7 kt of CO_2-eq, 11% more than the previous year, although 70.2% lower than in the year 2000.

GHG Emissions in the Industrial Sector 2000 v. 2014 (kt CO_2 equivalent)



Source: MAGRAMA

The sub-sector of substitute products for substances that deplete the ozone layer is that with the highest increase in emissions over the fifteen-year period under study, with emissions for 2014 totalling 16,899.5 CO_2-eq, 4.4% down on 2013 but 404.3% up from 2000.

Finally, the group "others" comprising the metal industry, non-energy fuel products and solvents and manufacturing and use of other products has emissions for a total of 4,908.9 kt of CO_2-eq, 16.25% less than in the year 2000.

Definition of the Indicator:

This indicator shows the greenhouse gas emissions (GHG) for the industrial sector, including in this sector: the energy production industry, manufacturing and construction, the mining industry, the chemical industry, the metal industry, non-energy fuel products and solvents, substitute products for substances that deplete the ozone layer, manufacturing and use of other products and, finally, other types of industrial processes of lesser production. This classification is used in the Common Reporting Format (CRF) adopted by the United Nations Framework Convention.

Methodological Notes:

- Greenhouse gases included in the data provided are: CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, mixtures of HFCs and PFCs, and NF_3.
- The figures for emissions are expressed in terms of CO_2 equivalent (CO_2-eq), calculated according to the global warming potentials of the 4th Assessment Report of the Intergovernmental Panel on Climate Change (IPCC). These only refer to gross emissions, excluding net carbon sinks (intake less emissions) of the Group "Use of floor space and changes in use of floor space and forests."

Source:

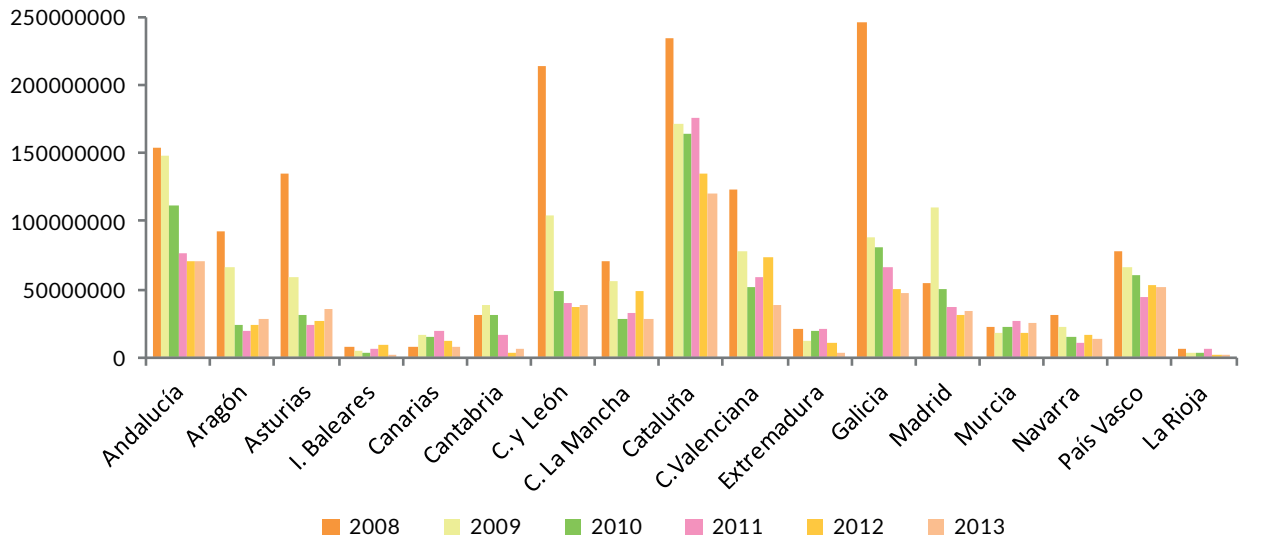
- MAGRAMA / National Inventory of Emissions. 1990-2014 Series

Recommended Websites:

- https://www.ipcc.ch
- http://canviclimatic.gencat.cat/es/redueix_emissions/guia_de_calcul_demissions_de_co2/
- http://www.fao.org/3/a-i4260s.pdf

Industry Taxes and Investment in Environmental Protection

Industry investment in environmental protection by Autonomous Community (thousands of €)



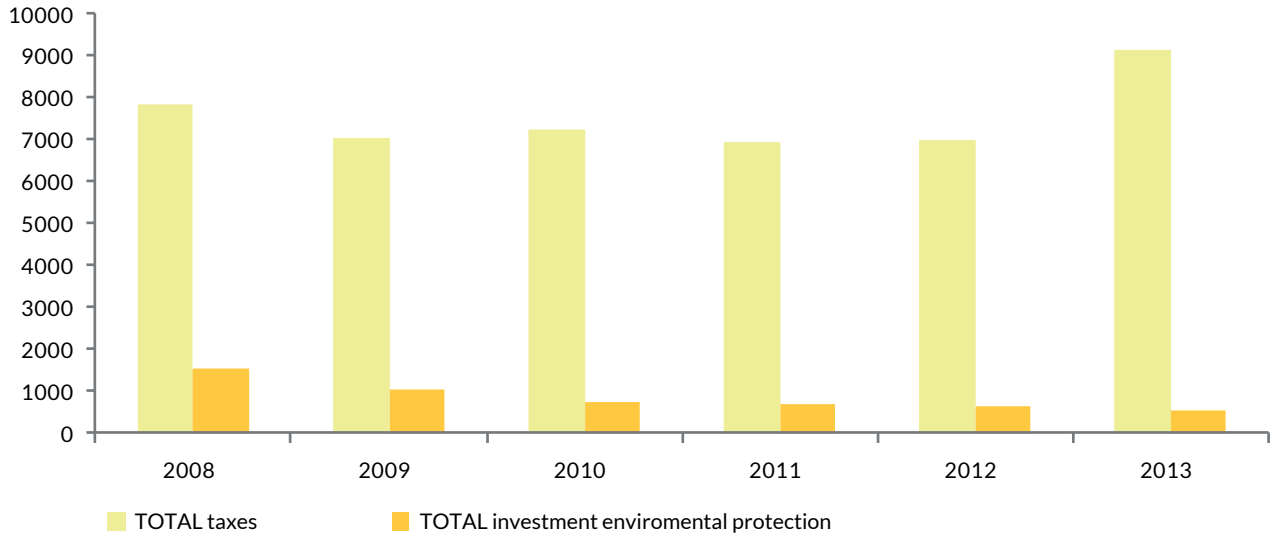
Source: INE

- *From the year 2004 to 2008 industrial investment in environmental protection increased by 62.1%, only to fall by 63.7% between 2008 and 2013. For the complete period, 2004-2013, this reduction was 41.21%*
- *Catalonia, Andalusia, the Basque Country and Castilla y León were the autonomous communities with the highest investment in environmental protection*
- *During the six-year period 2008-2013, the industrial sector paid 39,990.5 million euros more in taxes than in environmental investments*

Based on the data provided by the INE, total Spanish industrial investment on environmental protection between the years 2004 and 2013 was € 9,905,200,854. During the first part of the part of the period, 2004-2008, investment increased steadily by some 62.1% to reach its highest point in 2008 with € 1,533,797,410. The second part, 2008-2013, saw a steady, uninterrupted decline of 63.7%, undoubtedly due to the economic crisis. In 2013, investment in environmental protection rose to € 556,118,279, 10.8% less than in 2012 when a figure of € 624,045,715 was reached. When looking at the ten-year period, it can be observed that investment, in relation to the year 2004, which was € 945,923,063, has fallen by 41.21%.

Analysing the year on year variation in 2012-2013, we can see that across nine autonomous communities, investment in environmental protection fell in the year 2013, in particular the Balearic Islands, where the figure was 98.4% lower than in 2013, at € 149,602 compared to € 9,739,175 the previous year; Extremadura, where investment was 62.5% lower at € 4,012,028 in 2013; and the Valencian Community, with a decrease of 46.72% and investment of € 39,162,426, compared to 73,509,319 in 2012. On the other hand, Cantabria's industrial sector saw the highest increase in the budget for such investment in 2013, with an increase of 50.64% to € 5,907,054. Murcia increased investment by 39.4%, with € 25,025,861 in 2013 compared to € 17,950,005 in 2012; and in 2013 Asturias invested 34% more (€ 36,258,109) than in 2012 (€ 27,049,422).

Environmental investment v. environmental taxes. industrial sector (millions of €)



Source: INE

In terms of environmental taxes, over the period 2008-2013, the industrial sector paid a total of 45,219.4 million euros in environmental taxes. 2013 was the year it paid the most, at 9,139.1 million euros, 30.2% more than the previous year.

Analysing the balance of investments v. environmental taxes and taking into account that during the period under study (2008-2013), the industry invested 5,228.9 million euros in environmental protection, we observe that the sector paid 39,990.5 million euros more in taxes than in environmental investments. While investment in environmental protection fell dramatically over the same six-year period; 977.7 million euros, some 63.7%, environmental taxes paid rose by 1318.4 million euros; 16.9% more than in 2008.

Definition of the Indicator:

The indicator shows the assessment of investment in environmental protection made by the industrial sector in integrated equipment and facilities and independent equipment and facilities, to reduce or eliminate the emission of pollutants into the air, as well as acoustic pollution and the treatment of waste water and solid waste generated and to use less polluting raw materials or in less quantity.

The amount industrial sectors spend on environmental taxes is also represented, defined as taxes where the tax base consists of a physical (or similar) unit of some material which has a proved and specific negative effect 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.

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). Data relating to the Autonomous Cities of Ceuta and Melilla are included, which are not published to maintain statistical confidentiality.
- The term environmental protection refers to all activities that have the purpose of prevention, reduction and elimination of pollution or any other degradation of the environment, excluding those with a positive impact on it, which respond to the technical, hygiene or safety requirements of the company.

Source:

- INE: INEbase / Physical environment and environmental issues/ Environmental Statistics / Survey on Total Industrial Spend on Environmental Protection 2008-2013 Series
- INE: INEbase / Physical environment and environmental issues/ Environmental Statistics / Survey on Total Industrial Spend on Environmental Protection

Recommended Websites:

- http://www.iagua.es/noticias/espana/ep/15/07/16/industrias-espanolas-disminuyen-inversion-proteccion-medio-ambiente-2013

2.14 FISHING

The importance of the fishing sector both in Spain and across the European Union is unquestionable. The EU fishing industry is the fourth largest in the world, with total production representing 5% of global fishing production. Spain, for its part, is the number one producer of fish in the EU, accounting for almost 20% of the European total. The catches of Spain, Denmark, the United Kingdom and France, considered jointly, represent more than half of the total EU catch.

The growing demand for fish (and other products from the fishing and aquaculture sector) from consumers makes it now more necessary than ever to opt for management models that allow us to ensure the availability of resources, avoid overfishing and depletion of the population and make it possible, therefore, to ensure the long-term economic viability of the sector.

With this premise as the base, the EU Common Fisheries Policy, which entered into force in 2014, establishes a series of measures geared towards a more sustainable fishing sector.

Thus, from the EU and also, therefore, in Spain, came the introduction to the sector of innovative and more efficient fishing techniques in the use of resources: the reduction of discards and unwanted catches, the fostering of aquaculture as a strategic sector and one with great potential for the production of this type of food, and the creation of quality labels and marks, such as certification, and eco-labelling, among other things, to improve how fishing and aquaculture products are valued in terms of quality.

The gradual decline over the last 20 years of the number of fishing boats, their power and capacity, both across the EU and in Spain, is one of the many signs that indicate progress is being made in the search for balance between fishing capacity and the existing fishing opportunities. In this sense, fostering the competitiveness and viability of companies in the fishing sector (including artisan fishing) is essential: the existence of aid for the decommissioning of those fishing boats whose economic efficiency and profitability does not ensure its long-term continuity in the sector has proven key to reaching this objective.

Number of vessels and fishing fleet capacity

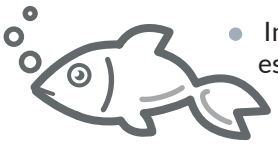
- Over the last 10 years, the Spanish fishing fleet that operates in national fishing grounds has shrunk by 29.2% in terms of numbers of vessels, by 25.7% in terms of gross tonnage (TG) and by 25.2% in terms of power (kW).
- This reduction is in-keeping with European and national policy that seeks to adjust the capacity of the fleet to real fishing opportunities, seeking the sustainability of the sector and preventing over-fishing.

Fishing fleet catches

- Spain has the highest volume of catches in the EU: in 2014 it reached 1,108,830 tonnes, 22.6% more than the previous year.
- In terms of the figures for catches established, following scientific criteria, from the EU it is key to guarantee the long-term availability of resources and the viability of the fishing sector.

Aquaculture production

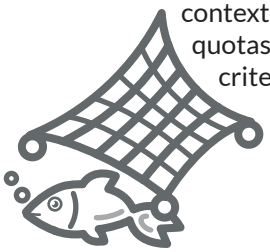
- Spain has the largest area of aquaculture production in the EU. In 2014, total production in the sector rose 22.5% in respect of 2013, reaching 307,179 tonnes.
- Organic aquaculture production, while still testimonial, continues to grow and shows significant potential for development.



- In 2014 there were 5,119 establishments dedicated to aquaculture in Spain, down 1.9% on 2013.

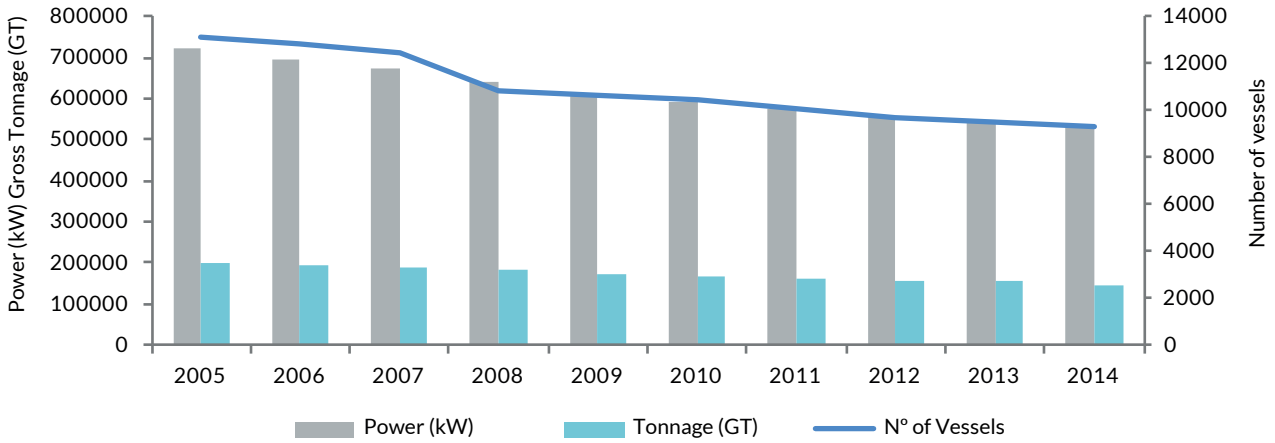
Environmental performance of the fishing and aquaculture sector

- The application of the EU Common Fisheries Policy was a determining factor in the evolution of the fishing sector in Spain: this explains both the progressive decline of the Spanish fishing fleet (in terms of the number of boats, power and tonnage) as well as the patterns in catches made.
- The increase in catch numbers over recent years in Spain must be seen in the context of the establishment of catch quotas by the EU, based on scientific criteria and ensuring the capacity of fishing stocks to renew.



Number of vessels and fishing fleet capacity

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



Source: MAGRAMA

- *Over the last 10 years, the Spanish fishing fleet that operates in national fishing grounds has shrunk by 29.2% in terms of numbers of vessels, by 25.7% in terms of gross tonnage (TG) and by 25.2% in terms of power (kW)*
- *This reduction is in-keeping with European and national policy that seeks to adjust the capacity of the fleet to real fishing opportunities, seeking the sustainability of the sector and preventing over-fishing*

With ensuring the long-term sustainability of the fishing sector, inevitably comes the need to guarantee the renewal of fishing stocks. With this final objective, a series of directives have been approved in the European Union over the years. The current Fisheries Policy, in force since 1 January 2014, moves in the same direction, opting for sustainable fishing from an ecological, economic and social perspective.

As a consequence of the policy and any successive guidelines adopted by the EU, the Spanish fishing fleet has experienced a progressive decline in terms of the number of boats, power and tonnage for over 15 years. This decline, favoured by the introduction of official aid for the definitive cessat ion of fishing activities, is aimed at facilitating the adjustment of the capacity of the fleet in line with real fishing opportunities, which are determined by existing fishing resources.

Royal Decree 1173/2015, of 29 December, on the development of the European Maritime and Fisheries Fund in relation to assistance for the definitive and temporary cessation of fishing activity, adapted to national regulations and Regulation (EU) No. 58/2014, of 15 May 2014, on the European Maritime and Fisheries Fund (EMFF). This regulation is established in Articles 33 and 34 of the EU assistance for the cessation, definitive or temporary, of fishing activity, and repeals Regulation (EU) No. 1198/2006 of the European Council, which previously regulated such matters.

The above-mentioned Royal Decree establishes the conditions that are applicable when it comes to providing assistance in the interests of the definitive cessation of fishing activity in Spain. The introduction of a minimum

age for the vessels to be retired is among these requirements which seek to avoid the cessation of activity by the fleet's more modern vessels, something that would result in the ageing of the fleet and would have consequences for the safety and efficiency of those that remain active.

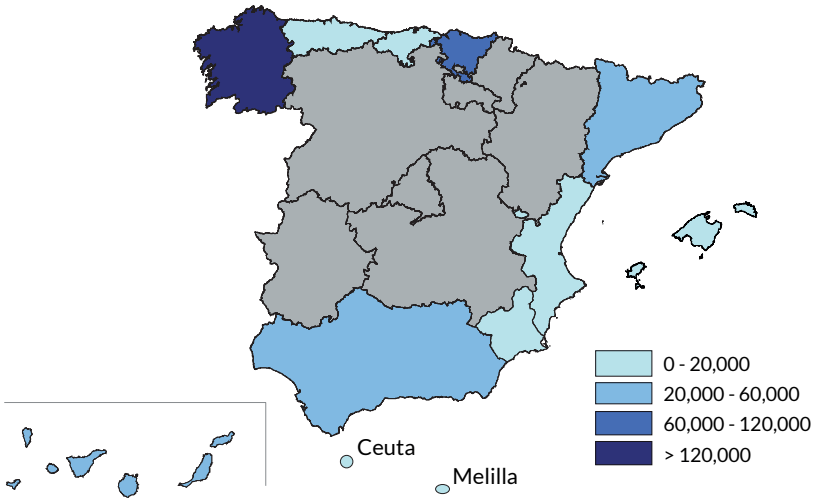
In 2014 the total Spanish fleet, operating in national and non-national fishing grounds, was comprised of 9,635 vessels, compared to 9,871 vessels in 2013 (constituting an annual decrease of 2.4%) with a total tonnage of 357,556 and power of 821,612 kW.

Over the 10-year period (2005-2014), the Spanish fishing fleet that operated in national fishing grounds and constituted the greater part of the total fleet (in 2014, only 3.4% of vessels fished outside national fishing grounds), shrunk by 29.2% in terms of the number of vessels, 25.7% in terms of gross tonnage (GT) and 25.2% in terms of power (kW).

The autonomous communities with the largest number of vessels in 2014 were Galicia (4,664 vessels), Andalusia (1,535 vessels), Catalonia (829 vessels) and the Canary Islands (821 vessels) and in terms of gross tonnage (volume or capacity of the boats) Galicia (152,558 GT), the Basque Country (74,838 GT) and Andalusia (39,399 GT). The downward trend for all variables in comparison to previous years is a general one.

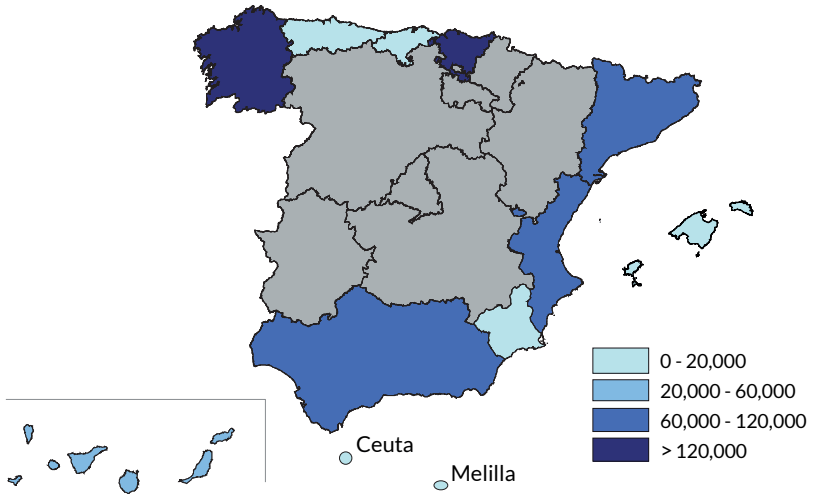
Fishing fleet tonnage 2014 (Total fishing grounds)

CCAA	Tonnage (GT)
Andalucía	39,399
Asturias	5,722
Balearic Islands	3,441
Canary Islands	23,363
Cantabria	7,867
Catalonia	21,628
Ceuta	7,980
Galicia	152,558
Murcia	2,720
Basque Country	74,838
C. Valenciana	18,038



Power of fishing fleet 2014 (Total fishing grounds)

CCAA	Power (kW)
Andalusia	119,849
Asturias	17,382
Balearic Islands	19,687
Canary Islands	53,693
Cantabria	19,522
Catalonia	94,534
Ceuta	11,211
Galicia	286,239
Murcia	10,420
Basque Country	124,700
C. Valenciana	64,376



Source: Fishing fleet statistics. MAGRAMA

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 vessels of the 3rd list of the General Fishing Vessel Register, integrating the Census of the Operational Fishing Fleet active as of 31 December 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 involved in artisan fishing and some of these do not even have a motor.

In order to calculate this indicator, in accordance with Regulation (EC) No. 2.371/2002 of the Council, 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:

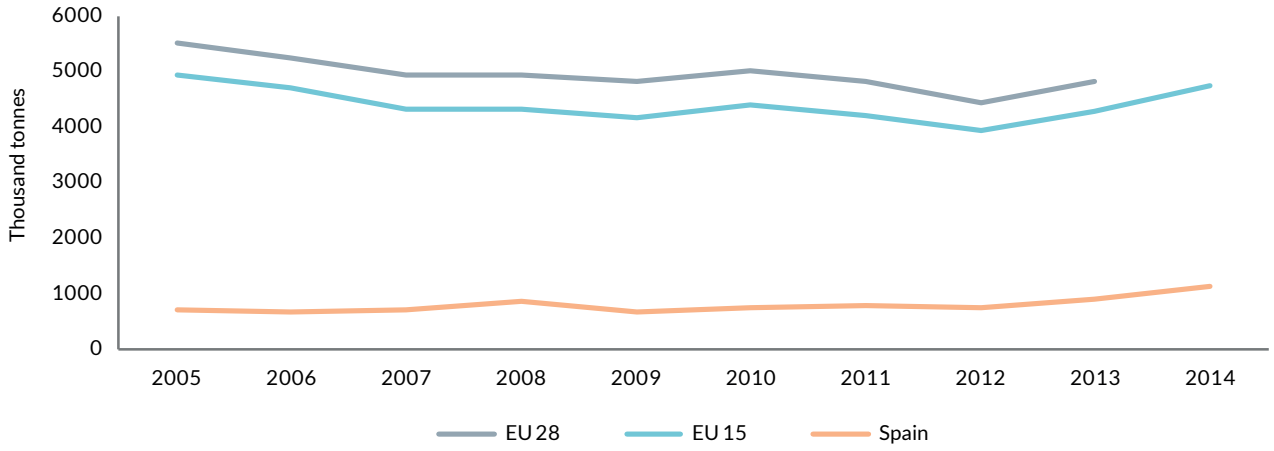
Ministry of Agriculture, Food and the Environment, 2015. Data provided by the General Secretariat for Fishing

Recommended Websites:

- http://www.magrama.gob.es/es/pesca/temas/

Fishing Fleet Catches

Total catch of the EU and Spain



Source: Eurostat

- *Spain has the highest volume of catches in the EU: in 2014 it reached 1,108,830 tonnes, 22.6% more than the previous year*
- *In terms of the figures for catches established, following scientific criteria, from the EU it is key to guarantee the long-term availability of resources and the viability of the fishing sector*

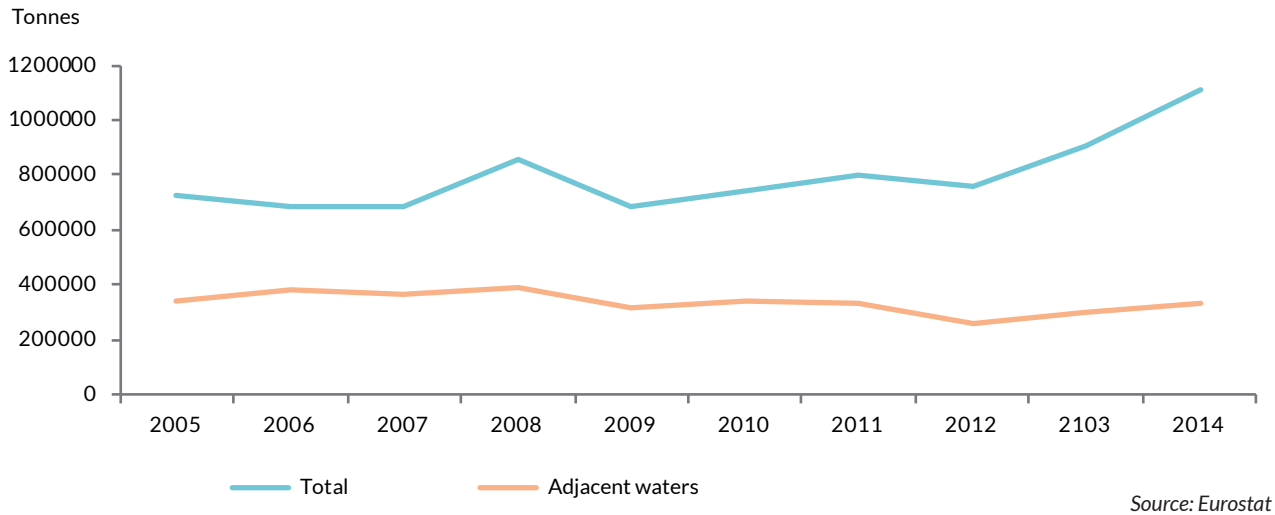
Fishing stocks are renewable but also finite. It is fundamental to manage them in a way that guarantees their long-term existence. For the purpose of alleviating pressure on fishing stocks and allowing populations to recover, the European Union imposes maximum catch quotas on countries, which are set in accordance with scientific criteria. Compliance with these quotas is key to ensuring the availability and well being of fish stocks in the medium to long-term, while meeting the fishing needs of the population and making fishing viable without compromising the benefits it provides in terms of employment and to the economy as a whole. This is, therefore, the frame of reference to be considered when it comes to interpreting the catch data of the Spanish fishing fleet.

Spain, according to data provided by the European Commission statistics office (Eurostat), is the country with the highest volume catches in the European Union. In 2014, total catches by Spanish fishermen grew by 22.6% in respect of 2013, reaching 1,108,830 tonnes. This represents in and around 20% of the total EU catch.

But beyond total catches (that is, those from Spanish fishermen both in adjacent waters and in national fishing grounds and in fishing grounds in the rest of the world) catches in adjacent waters also increased in 2014 by 10.9%, reaching 330,200 tonnes, compared to 297,785 tonnes in 2013.

In the evolution of catches in adjacent waters, in the different fishing grounds (Cantabrian and North-East Fishing Grounds, Gulf of Cádiz Fishing Grounds, Mediterranean Fishing Grounds, Canary Islands Fishing Grounds) into which the National Fishing Grounds are divided, one can observe how catches increased in all of these except for the Mediterranean where there was a 5.5% reduction.

Total catch of the EU and Spain



Source: Eurostat

Catches in adjacent waters

Geographic areas	2013	2014	2013-2014 Change (%)
Mediterranean	82,999	78,467	-5.5
Canary Islands	11,044	17,042	54.3
Cantabrian and North-East	113,594	143,587	26.4
Gulf of Cádiz	90,148	91,104	1.1
Total catches in adjacent waters	297,785	330,200	10.9

Source: Eurostat

In absolute terms, the Cantabrian and North-East Fishing Ground had the highest catch in 2014 in adjacent waters (143,587 tonnes), the Canary Islands Fishing Ground had the largest increase on the previous year (with an annual increase of 54.3%, reaching 17,042 tonnes).

Definition of the Indicator:

The indicator shows the evolution of the total volume of catches by the Spanish fleet (expressed in tonnes of live weight) in the national fishing grounds (and adjacent waters) and in fishing grounds in the rest of the world.

Methodological Notes:

For National Fishing Grounds (the Mediterranean, Cantabrian- North-Eastern , Gulf of Cádiz and the Canary Islands) 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 used respectively.

Source:

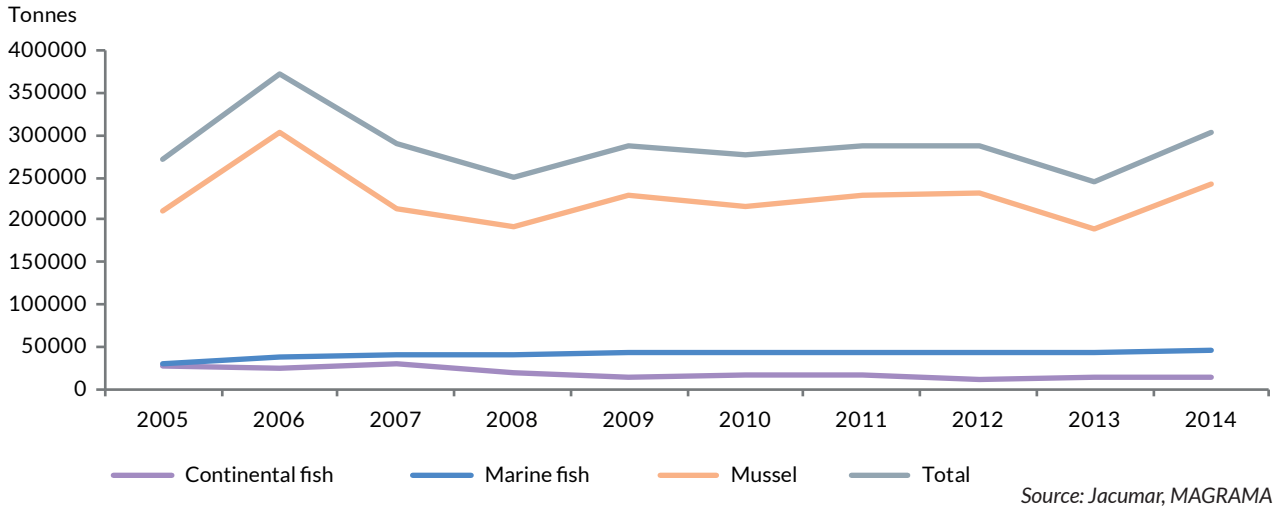
- EUROSTAT: Statistics / Statistics by theme / Agriculture and fisheries / Fisheries / Data Base / Total all fishing areas.
- EUROSTAT: Statistics / Statistics by theme / Agriculture and fisheries / Fisheries / Data Base / Catches by fishing area / Mediterranean and Black Sea
- EUROSTAT: Statistics / 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 Gulf of Cádiz Portugal

Recommended Websites:

- http://www.magrama.gob.es/es/pesca/temas/
- http://ec.europa.eu/eurostat/data/database

Aquaculture production

Aquaculture production in Spain



Source: Jacumar, MAGRAMA

- *Spain has the largest area of aquaculture production in the EU. In 2014, total production in the sector rose 22.5% in respect of 2013, reaching 307,179 tonnes*
- *Organic aquaculture production, while still testimonial, continues to grow and shows significant potential for development*
- *In 2014 there were 5,119 establishments dedicated to aquaculture in Spain, down 1.9% on 2013*

Given, on the one hand, the limits of fishing stocks and the strain placed on them and, on the other hand, continued global population growth and the resulting increased food demand, aquaculture is a strategic sector with great development potential. The European Union Common Fisheries Policy recognises this and establishes a series of directives to foster its development.

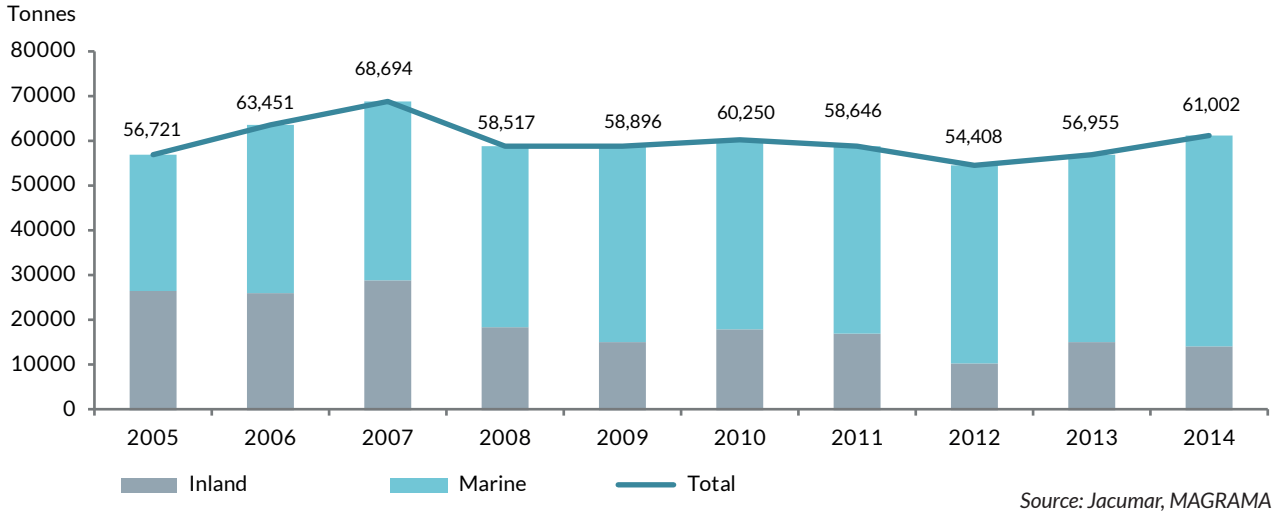
Spain has the largest area of aquaculture production in the EU. In 2014 total production in the aquaculture sector in our country was 307,179 tonnes, producing a notable increase (22.5%) in production on the previous year (250, 742 tonnes in 2013).

95.1% (292,193 tonnes) of national production in 2014 was marine aquaculture production, the remainder being inland aquaculture production (14,986 tonnes). This same year there was a 24.5% increase in marine aquaculture production in respect of 2013, while inland aquaculture production fell by 6.9%.

In terms of the type of product, fish constituted the greater part of inland aquaculture production in 2014 (94.2%), while molluscs (principally the mussel) were the main product in the case of marine aquaculture, representing 83.7% of total production.

Analysing exclusively the evolution of the production of fish, one can observe that in the case of marine aquaculture, this has fell by 5.1% in 2014 in respect of 2013, reaching 14,119 tonnes, while in the case of inland aquaculture it grew by 11.4%, reaching 46,884 tonnes.

Marine and inland aquaculture: fish production



Source: Jacumar, MAGRAMA

The rainbow trout remains, once again, the species that is the focus of inland aquaculture, constituting 99.2% of the total fish production in 2014. In the case of marine aquaculture, the most popular species were sea bass and sea bream: these two alone constituted 76.9% of fish production.

Mussel production, after significant reduction in 2013, recovered in 2014 (up 27.8%) to reach 241,479 tonnes, its highest value in recent years.

It must also be mentioned that although organic marine and inland aquaculture production is still testimonial and constitutes of a minor percentage of total aquaculture (0.2% of marine and 2.5% of inland in 2014), it has continued to grow notably over recent years and presents a great potential for development.

In 2014 the number of aquaculture farms in Spain grew: the number dedicated to marine aquaculture rose to 4,933 (1.8% on 2013) and the number dedicated to inland aquaculture rose to 186 (4.5% on 2013).

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, as per the Spanish acronym).

Methodological Notes:

Data on aquaculture in Spain are provided by the National Advisory Board for Marine Farming (JACUMAR), which has been compiling production and value data on marine and inland aquaculture in Spain since 1985, as designated in the Marine Farming Act. For this, it requests data from the Directorates General with competencies in aquaculture in the autonomous communities and modifies, standardises and validates them before making them available to users on the MAGRAMA website. The production data provided by JACUMAR refers to the quantities of each species farmed that leave the farm, having finished one or several phases of the life cycle.

Source:

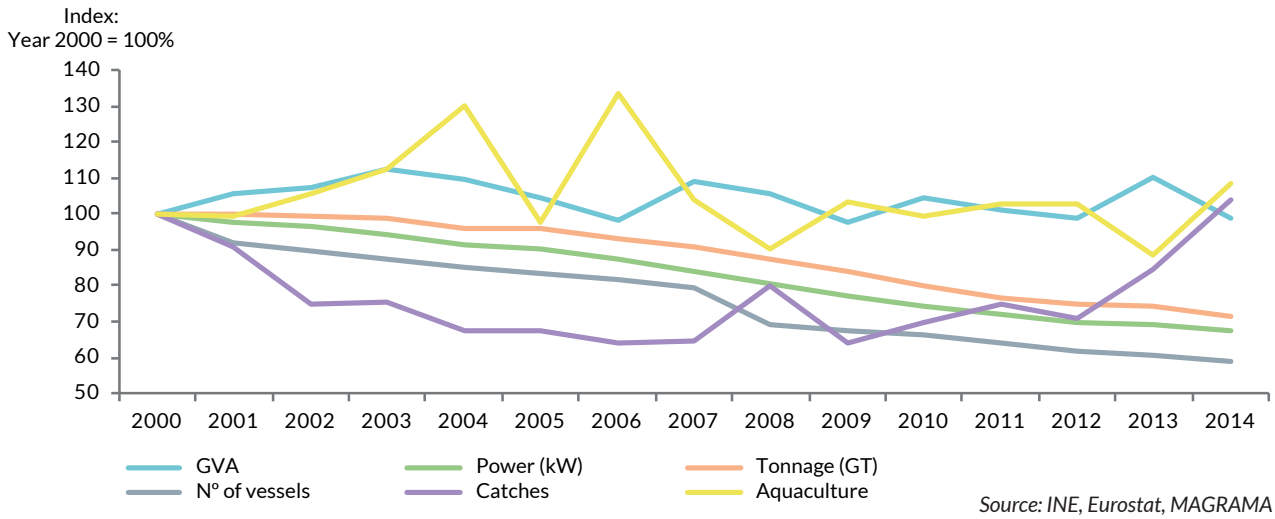
JACUMAR, National Advisory Board for Marine Farming. Ministry of Agriculture, Food and the Environment.

Recommended Websites:

- http://www.magrama.gob.es/es/pesca/temas/acuicultura/
- http://www.apromar.es/content/la-acuicultura-en-españa-2015/
- http://www.fundacionoesa.es/

Environmental Efficiency in the Fishing and Aquaculture Sector

Environmental performance in fishing and aquaculture



Source: INE, Eurostat, MAGRAMA

- *The application of the EU Common Fisheries Policy was a determining factor in the evolution of the fishing sector in Spain: this explains both the progressive decline of the Spanish fishing fleet (in terms of the number of boats, power and tonnage) as well as the patterns in catches made*
- *The increase in catch numbers over recent years in Spain must be seen in the context of the establishment of catch quotas by the EU, based on scientific criteria, ensuring the capacity of fishing stocks to renew*

Aspiring to achieve a more sustainable fishing sector and aquaculture sector means ensuring its economic viability and capacity to create employment, while preventing overfishing of stocks and ensuring their long-term availability.

The European Union's commitment in this area, and therefore Spain's, is clear and is addressed in the Common Fisheries Policy.

If the evolution over the last 15 years of the Gross Value Added (GVA) of the sector comprised of agriculture, livestock and fishing, and a series of significant variables in characterising the fishing and agriculture sector (number of trawlers, power and tonnage of same, catches, aquaculture production), it is possible to envisage certain patterns linked to decisions being taken at EU and national level to foster sustainability in the sector.

Thus, the clear decline in the number of fishing vessels that operated in national fishing grounds (down 40.9% since the year 2000, having gone from 15,745 vessels in that year to 9,303 in 2014) and the power and tonnage of the Spanish fishing fleet (down 32.6% and 28.7% respectively between 2000 and 2014), is the direct result of the introduction of the Common Fisheries Policy, which aims to adjust the fishing fleet that can access available fishing stocks.

In this sense, and in contrast with the above, the increased catches (up 3.9% between 2000 and 2014; up 22.6% between 2013 and 2014). This increase should not, however, be seen as an isolated case in the EU,

where total catches have fallen over many years and where, moreover, Total Admissible Catches (TACs) and quotas based on scientific criteria have been established to prevent overfishing of fishing stocks.

In this context of limited stocks, but at the same time a growing demand for fish on the part of the population (and other marine produce), aquaculture (both marine and inland) offers great potential for development. If the evolution of aquaculture production in Spain experienced certain fluctuations over recent years, the overall trend is positive (total production of the sector increased by 3.9% between 2000 and 2014 and 22.6% between 2013 and 2014).

The fact the the GVA of the agriculture, livestock and fishing sector has fallen slightly in Spain between 2000 and 2014, by 1.1% (-10% between 2013 and 2014) reinforces the idea that we must persevere with taking measures that ensure the maintenance of fishing stocks in the long term, while also guaranteeing the economic viability of the sector.

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 Spanish fishing (number of vessels, fishing fleet capacity in terms of power and tonnage, catch levels) and aquaculture sector (total production).

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.
The information on the number of vessels, the power and tonnage refers only to those that fish in national fishing grounds.

Source:

GVA: Spanish National Accounting. INE.
No. of ships, power and tonnage: General Secretariat for Fishing. 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 for Maritime Fishing. Ministry of Agriculture, Food and the Environment.

Recommended Websites:

- http://www.magrama.gob.es/es/pesca/temas/
- http://www.ine.es/inebmenu/mnu_cuentas.htm
- http://ec.europa.eu/eurostat/data/database
- http://www.magrama.gob.es/es/pesca/temas/acuicultura/

2.15 TOURISM

Tourism is constantly growing at a global level. In accordance with data from the World Tourism Organization barometer of May 2016, the number of international tourists in 2015 reached 1,184 million worldwide, 50 million more than during 2014.

MAIN WORLD TOURISM DATA (international tourist arrivals) – 2014 and 2015

Tourist destinations	No. of tourists in 2014 (millions)	No. of tourists in 2015 (millions)	2015/2014 increase (%)
Europe	580.2	607.6	4.7
Asia-Pacific	264.3	278.6	5.4
America (North and South)	181.9	191.0	5.0
Middle East	52.4	53.3	1.6
Africa	54.9	53.3	-2.9
World total	1,133.7	1,183.8	4.4

Source: World Tourism Organization. "World Tourism Barometer". Volume 14, May 2016.

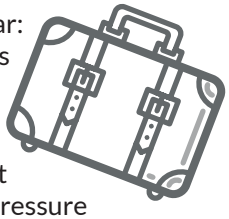
This figure confirms the positive trend being experienced by the sector since 2009. In 2015, the increase in the number of tourists with respect to the previous year was 4.4% and, with the exception of Africa where tourism decreased by 2.9%, it grew worldwide. The Asia-Pacific region saw arrivals of tourists increase the most in relative terms (5.4% on 2014); the number of travellers reached 278.6 million in that region.

However, in absolute terms, Europe was the area with the highest number of foreign tourists in 2015: 607.6 million, 27.4 million more than in the previous year. Within Europe, the Mediterranean area was the most visited area with 225.1 million international tourists and an increase of 4.7% with respect to 2014.

This information shows the importance of the tourism sector in Spain. 68.2 million foreign tourists visited the country in 2015, an increase of 5% on the previous year and 95.3% compared to 20 years ago. 2015 was a record year with regards to the arrival of international tourists, which proved key for the economic recovery of the country.

According to the World Tourism Organization, in 2015 Spain was the third most visited destination in the world, both in terms of the arrival of foreign tourists (behind only France and the USA) and income from international tourism (behind the USA and China). In that same year, Spain ranked first in the Travel and Tourism Competitiveness Index prepared annually by the World Economic Forum assessing the competitiveness of the tourism sector at a national level based on criteria such as existing transport and tourism infrastructures, natural and cultural resources, adaptation to the trends of the new digital consumers, safety of the country and environmental sustainability of the sector, among others.

Number of foreign tourists per inhabitant

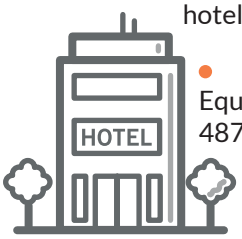


- 2015 was a record year: 68.2 million foreign tourists visited Spain; a ratio of 1.46 tourists/inhabitant.
- There is a significant difference in the tourist pressure the different autonomous communities are subject to: at either extreme lie the Balearic Islands (10.5 tourists/inhabitant) and Castilla-La Mancha (0.10 tourists/inhabitant).
- Catalonia, the Balearic Islands and the Canary Islands were the destinations of 60% of total tourists who visited Spain in 2015.

Number of foreign tourists per kilometre of coastline

- Almost 90% of tourists arriving in Spain choose coastal communities as their final destination.
- In 2015, the Mediterranean coast remained the most visited area, reaching 11,847 tourists/km of coastline, as compared to 7,321 tourists/km of the Canary Islands and 1,427 tourists/km of the Cantabrian and Galician Coast.

Equivalent Tourist Population in areas with the highest number of overnight stays in hotels



- In 2015, the 10 main tourist areas in Spain reached a total of 177,8 million overnight hotel stays.
- Such a figure amounts to an Equivalent Tourist Population of 487,197 people/day.

Number of visitors to National Parks

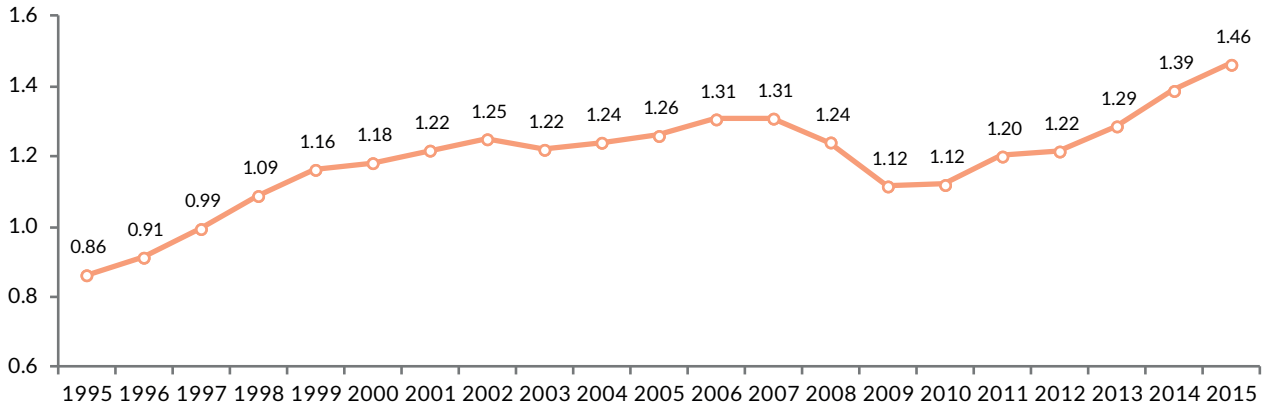
- 14,224,331 people visited the 15 Spanish National Parks in 2015, 3.6% more than in 2014.
- The National Parks with the highest pressure from tourism were Timanfaya, Garajonay and Teide, whereas Cabañeros, Doñana and Sierra Nevada were those with the lowest visitors/hectares ratio.

Rural tourism: accommodation, capacity, tourists and overnight stays

- All rural tourism indicators (accommodation, capacity, overnight stays and travellers) have experienced positive year-on-year variation rates in 2015 compared to 2014.
- Their evolution during the last decade has also been positive.

Foreign Tourists per Inhabitant

Foreign tourists per inhabitant



Source: Turespaña and INE

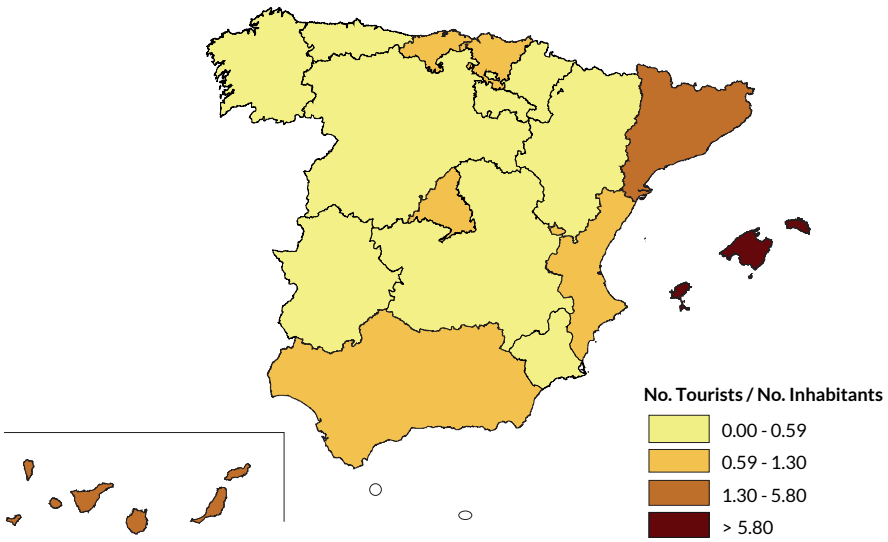
- ***2015 was a record year: 68.2 million foreign tourists visited Spain; a ratio of 1.46 tourists/inhabitant***
- ***There is a significant difference in the tourist pressure the different autonomous communities are subject to: at either extreme lie the Balearic Islands (10.5 tourists/ inhabitant) and Castilla-La Mancha (0.10 tourists/inhabitant)***
- ***Catalonia, the Balearic Islands and the Canary Islands were the destinations of 60% of total tourists who visited Spain in 2015***

2015 was a record year once again, as was 2014 the year before, with regards to international tourist arrivals in Spain (68.2 million, 15% more than in the previous year). The number of international tourists choosing our country as their holiday destination has been on the increase since 2009, a year during which the recovery in the number of arrivals began after the drop experienced during the first few years of the crisis.

This upward trend matches the numbers of international tourists per inhabitant of the country which rose to 1.46 tourists per inhabitant in 2015. As shown in the chart, this ratio has been experiencing a positive evolution since 2009-2010, when it reached 1.12 tourists per inhabitant. The increase experienced by this indicator is due to the increase in international tourist arrivals since 2009 and the decrease in the Spanish population since 2012 (47.3 million inhabitants during that year compared to 46.7 million in 2015).

The average rate corresponding to tourists per inhabitant does not offer a realistic idea of the major differences arising between autonomous communities, particularly that between the one with the highest rate (the Balearic Islands, with 10.55 tourists/inhabitant) and the other communities. As well as the Balearic Islands, only the Canary Islands and Catalonia, with rates amounting to 5.52 and 2.32 tourists/inhabitant respectively, exceed that average. At the other end of the spectrum, Castilla-La Mancha and Extremadura, with rates amounting to 0.10 and 0.18 tourists/inhabitant respectively, are the communities in which this indicator shows the lowest values.

Distribution of the number of tourists per inhabitant Year 2015



Source: Turespaña and INE

The absolute values of inbound tourists contribute to our understanding of the importance of the tourism sector for a certain autonomous community. Therefore, in absolute terms, the autonomous communities with the highest number of foreign tourists in 2015 were Catalonia (17.4 million tourists; 25.6% of the total), the Balearic Islands (11.6 million; 17.1% of the total) and the Canary Islands (almost 11.6 million; 17.0% of the total). These three autonomous communities alone add up to 60% of international tourists visiting Spain during that year. La Rioja was once again the autonomous community with the lowest number of international tourists (83,626; 0.1% of the total).

Number of non-resident tourists by means of arrival 2005-2015

	2005	2014	2015	Change 2014-2015 (%)	Change 2005-2015 (%)
Airport	40,729,830	51,822,657	54,215,805	4.6	33.1
Road	13,118,561	11,953,093	12,487,244	4.5	-4.8
Seaport	1,408,273	858,984	1,069,731	24.5	-24.0
Rail	319,850	304,210	341,180	12.2	6.7

Source: Turespaña, INE

Most tourists (54.2 million, 79.5% of the total) arriving in Spain in 2015 chose air transport. The number of tourists favouring other means of transport to reach their destination was remarkably lower: 12.5 million chose road transport (18.3% of the total), 1.1 million (1.6% of the total) entered through a sea port, and just 0.3 million used rail transport (0.5% of the total).

Definition of the Indicator:

Ratio between the number of international tourists visiting Spain and the number of inhabitants in the country.

Methodological Notes:

This indicator relates the number of foreign tourists to the resident population in Spain. It is useful to show the level of tourist load of different tourist destinations, but it is also desirable to maintain an appropriate balance between the number of visitors and the resident population in order to ensure the sustainability of this sector. 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.

On the 1 October 2015, Turespaña ceased to be responsible for the Tourist Movement on Borders (FRONTUR), source of the information used for this indicator until the aforementioned date. The competence for publication of these statistics has been undertaken by the INE. As a consequence of this change, there has been a variation in the methodology for the collection and processing of the associated information. These methodological changes may be checked in the Methodology section at the following link:

http://www.ine.es/jaxi/menu.do?type=pcaxis&path=%2Ft11%2Fp16028&file=inebase&L=0

Source:

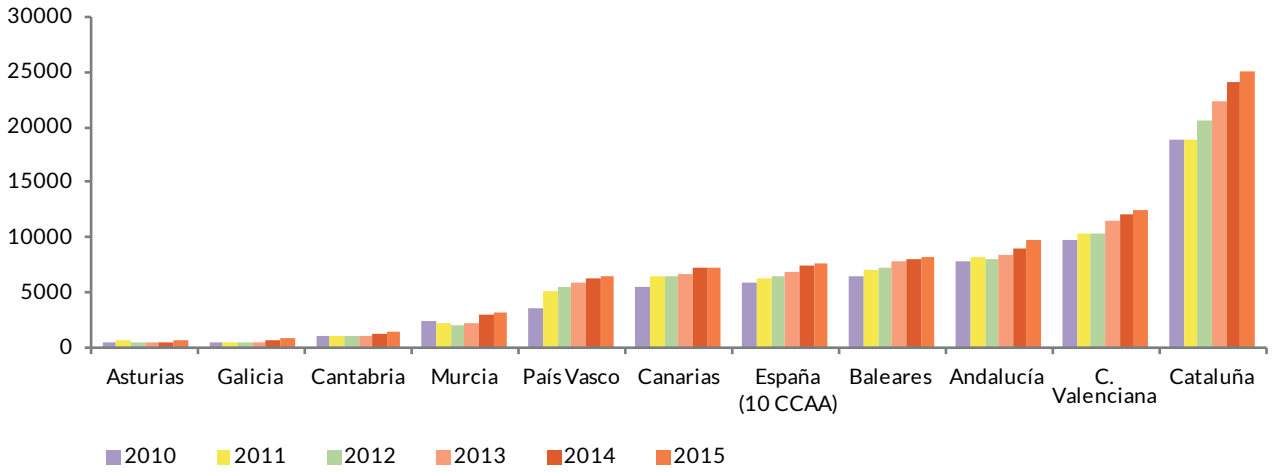
- For annual data until 2014 and monthly data until September 2015 (both included): Statistics on Tourist Movement on Borders (FRONTUR, as per the Spanish acronym), prepared by the Tourism Institute of Spain (Turespaña).
- For annual data from 2014 and monthly data from September 2015: Statistics on Tourist Movement on Borders prepared by the Spanish National Institute of Statistics (INE).

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
- http://www.ine.es/jaxi/menu.do?type=pcaxis&path=%2Ft11%2Fp16028&file=inebase&L=0

Foreign Tourists per kilometre of Coastline

Foreign tourists per km of coastline



Source: Turespaña and INE

- ***Almost 90% of tourists arriving in Spain choose coastal communities as their final destination***
- ***In 2015, the Mediterranean coast remained the most visited area, reaching 1,847 tourists/km of coastline, as compared to 7,321 tourists/km of the Canary Islands and 1,427 tourists/km of the Cantabrian and Galician Coast***

Most tourists arriving in Spain choose coastal communities as their final destination. The tourist intake is not homogeneous with the Spanish coast since, as shown in the previous chart, travellers clearly favour insular and Mediterranean destinations instead of those on the northern coast (Cantabrian and Galician coast).

In 2015, the ratio of tourists per kilometre of coastline reached its highest values in Catalonia (24,959 tourists/km), followed by C. Valenciana (12,540 tourists/km), Andalusia (9,864 tourists/km) and the Balearic Islands (8,158 tourists/km). Murcia was, in fact, the only autonomous community on the Mediterranean coast which did not reach the average of 7,724 tourists/km, calculated taking into account the 10 coastal communities in the country, a ratio which increased by 4.2% in 2015 on 2014 and by 21.3% since 2005. Asturias (606 tourists/km), Galicia (808 tourists/km) and Cantabria (1,417 tourists/km) were, at the other end of the spectrum, the communities with the lowest ratios corresponding to tourists per kilometre of coastline. In the northern area, only the Basque Country, with 6,549 tourists/km, came close in 2015 to the aforementioned average.

In order to understand the pressure different destinations are subject to, the analysis of the aforementioned ratios must be complemented with the absolute value of inbound tourists. Therefore, out of the 68.2 million tourists arriving in Spain in 2015, 60.8 million chose one of the coastal communities of the country (89.2% of the total) and, out of that number, 45.8 million international tourists chose the Mediterranean coast (67.1% of the total), as compared to 11.5 million who favoured the Canary Islands (17% of the total) and 3.5 million tourists (5.1% of the total) who chose the Cantabrian and Galician coasts. These figures represent a rate of 11,847 tourists per km of coastline for the Mediterranean area, 1,427 for the northern area and 7,321 for the Canary Islands.

By autonomous community, Catalonia (17.4 million tourists), the Balearic Islands (11.6 million) and the Canary Islands (11.5 million) were the most visited ones in 2015 whereas Asturias and Cantabria (242,923 and 402,560 tourists respectively) were the autonomous communities with the lowest number of foreign tourists.

However, during the last year, all coastal autonomous communities, without exception, increased their ratio corresponding to the number of international tourists per km of coastline in their territories; the increase in Galicia was particularly relevant (+15.4% compared to 2014).

Definition of the Indicator:

Ratio between the number of foreign tourists visiting the Spanish coasts and the length of the coasts.

Methodological Notes:

For the analysis of the ratio tourists/km of coastline, it must be taken into account that figures do not only depend on the number of tourists but also on the length of the coastlines which, even considering just three autonomous communities (Galicia, the Balearic Islands and the Canary Islands) , exceeds 4,500 km.

The coast length considered for the calculation of this indicator is the one provided by the INE 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).

On the other hand, as a consequence of the change of competences for the preparation of the Statistics on Tourist Movement on Borders (FRONTUR, as per the Spanish acronym
), source of information for this indicator, handed over by Turespaña to the INE on the 1 October, there has been a change in the methodology for the collection and processing of the associated information. These changes may be checked in the Methodology section on the following link:
http://www.ine.es/jaxi/menu.do?type=pcaxis&path=%2Ft11%2Fp16028&file=inebase&L=0

Source:

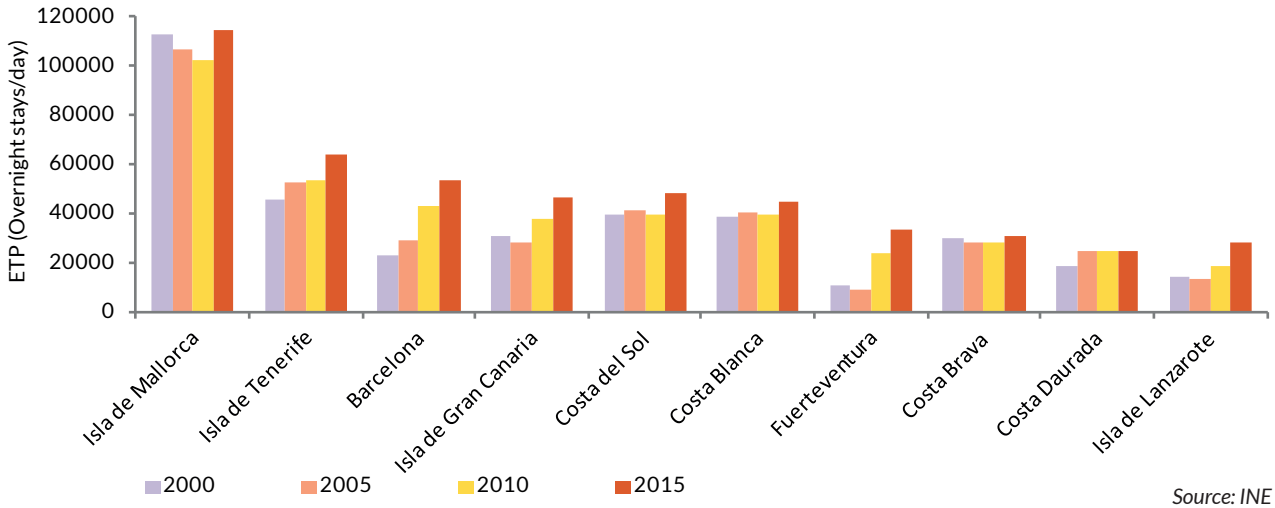
- For annual data until 2014 and monthly data until September 2015 (both included): Statistics on Tourist Movement on Borders (FRONTUR), prepared by the Tourism Institute of Spain (Turespaña).
- For annual data from 2014 and monthly data from September 2015: Statistics on Tourist Movement on Borders prepared by the Spanish National Institute of Statistics (INE, as per the Spanish acronym).
- INE. Physical environment. Length of coasts and borders. Coast length by province.

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
- http://www.ine.es/jaxi/menu.do?type=pcaxis&path=%2Ft11%2Fp16028&file=inebase&L=0
- http://www.magrama.gob.es/es/costas/temas/default.aspx

Equivalent Tourist Population in areas with the highest number of overnight stays in hotels

Equivalent Tourist Population (ETP)
the main tourist areas



Source: INE

- *In 2015, the 10 main tourist areas in Spain reached a total of 177,8 million overnight hotel stays*
- *Such a figure amounts to a Equivalent Tourist Population of 487,197 people/day*

The Equivalent Tourist Population (ETP) shows the pressure tourism puts on areas with a high number of visitors since, when dividing the total number of annual overnight stays in these areas by the number of days of the year, we obtain the daily number of people (domestic and international tourists) who stay there, in addition to local residents.

When analysing the ten tourist areas with the highest number of tourists in Spain as a whole, in which the total number of overnight stays in hotels reached 2,379.5 million in the period 2000-2015, we obtained an ETP amounting to 6,519,139 people per day to be added to their local population, with the resulting additional pressure.

By area, the island of Fuerteventura experienced the greatest increase in its ETP (207.8%) during the aforementioned period, followed by the Barcelona area (128.8%) and the island of Lanzarote (96.2%). In the last 15 years, out of the main tourist areas, only the islands of Ibiza-Formentera experienced a slight decrease in their ETP (-3.8%).

If 2015 alone is considered in the calculation, the ten areas with the highest number of tourists in Spain (all of which are coastal destinations) combined for a total of 177.8 million overnight stays which, translated into ETP, amounts to 487,197 people/day.

As in the case of previous years, Majorca was in 2015 the area with the highest number of tourists (41.8 million overnight stays; an ETP of 114,614 people/day), increasing the number of overnight stays in 2015 by

2.9% as compared to 2014. Majorca was followed by Tenerife (23.4 million overnight stays; ETP 64,012 people/day), the Barcelona Area (19.4 million overnight stays; ETP 53,140 people/day), the Costa del Sol (17.7 overnight stays; ETP 48,579 people/day) and the island of Gran Canaria (16.9 million overnight stays; ETP 46,183 people/day).

Also, for the same year, Lanzarote was included once again in the list of the 10 main tourist areas, replacing the islands of Ibiza-Formentera. The number of overnight stays on the island increased in 2015 by 1.8% compared to 2014, reaching 10.3 million overnight stays (ETP 28,219 people/day). It outranked the islands of Ibiza-Formentera, with 8.3 million overnight stays (ETP 22,643 people/day) and the Costa Daurada, with 8.5 million overnight stays, an area that in 2015 ranked tenth in the list of areas with the highest number of tourists.

The area of the Pyrenees is the only non-coastal tourist area included in the Hotel Occupancy Survey by the INE. In 2015 this area experienced an increase of 7.5% in the number of overnight stays with respect to the previous year, reaching 3.2 million (ETP 8,697 people/day).

Equivalent Tourist Population (ETP) in the 10 areas with the highest number of overnight stays in hotels (2000-2014)

	2000	2001	2002	2003	2004	2005	2006	2007	
ETP	363,443	364,260	346,733	358,709	356,312	372,199	409,880	410,352	
Rate	100.0	100.2	95.4	98.7	98.0	102.4	112.8	112.9	
	2008	2009	2010	2011	2012	2013	2014	2015	TOTAL
ETP	410,338	384,229	410,620	452,976	451,356	464,343	476,191	487,197	6,519,139
Rate	112.9	105.7	113.0	124.6	124.2	127.8	131.0	134.1	

Source: INE

Definition of the Indicator:

Number of overnight stays of resident and non-resident tourists, calculated as the Equivalent Tourist Population (ETP), in the ten areas with the highest levels of tourism, compiled in the Hotel Occupancy Survey (EOH, as per the Spanish acronym), published annually by the INE.

Methodological Notes:

The ETP is calculating by dividing the total number of annual overnight stays by resident and non-resident tourists by 365 days. "Overnight stay" is the term used for each night the traveller stays in a certain establishment. From an environmental perspective, the importance of the indicator lies in the fact that it focuses on the pressure arising from the increase in the population in those areas subject to the highest number of tourists.

The main tourist destinations in Spain are generally “mature” destinations. The list of the ten tourist areas with the highest number of overnight stays has remained rather unvaried in the last 15 years; there has been some fluctuation in the list throughout this period affecting areas such as the Costa Daurada, Lanzarote or the islands of Ibiza-Formentera, which were in and out of the rankings depending on the year.

Palma-Calvià, which is one of the main areas considered by the INE (it has appeared in the top 10 since 2003), does not appear in the chart above as it is included under the island of Majorca.

Source:

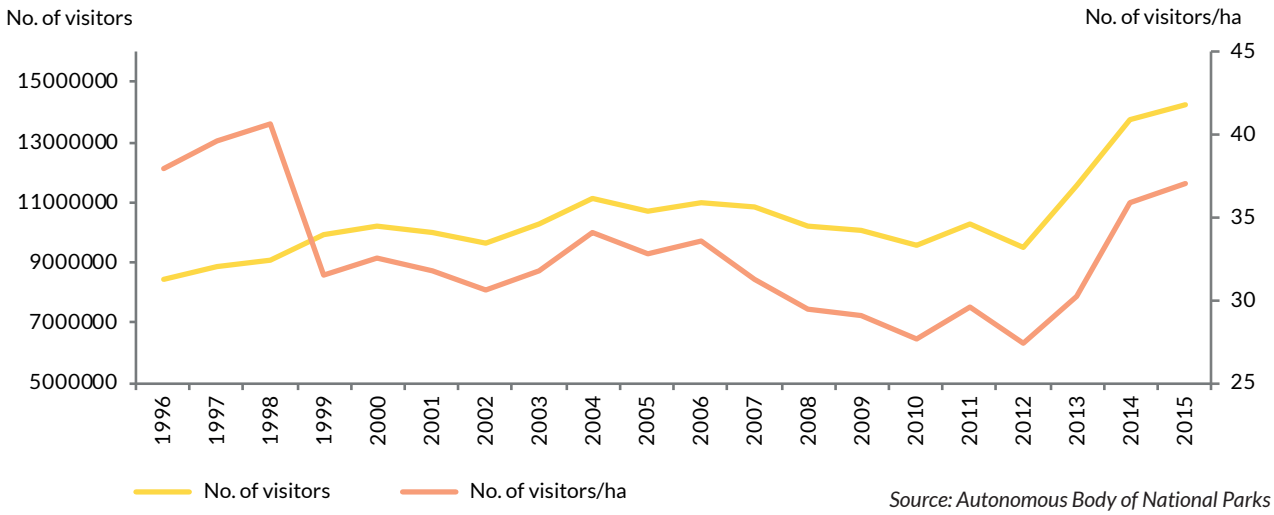
INE: Hotel Occupancy Survey (EOH) 2000-2015.

Recommended Websites:

- http://www.ine.es/jaxi/menu.do?type=pcaxis&path=%2Ft11%2Fe162eoh&file=inebase&L=0

Number of Visitors to National Parks

Number of visitors to National Parks



Source: Autonomous Body of National Parks

- ***14,224,331 people visited the 15 Spanish National Parks in 2015, 3.6% more than in 2014***
- ***The National Parks with the highest pressure from tourism were Timanfaya, Garajonay and Teide, whereas Cabañeros, Doñana and Sierra Nevada were those with the lowest visitors/hectares ratio***

National Parks are the most iconic protected areas in our country. They are exceptional spaces, not only due to their natural value but also to the social popularity they have.

The acknowledgement of their value to society is evidenced by the increasing number of visitors they receive: 14,255,003 people visited the 15 parks comprising the Network of National Parks in 2015. This is a 3.8% increase as compared to 2014, and a 29.8% increase over the last ten years (2006-2015) and a 68.3% increase over the last 20 years (1996-2015).

Almost all parks experienced an increase in the number of visitors. Tablas de Daimiel, Cabañeros and Monfragüe were the National Parks where visits increased the most in 2015 (by 23.3%, 14.5% and 14% respectively) as compared to the previous year.

However, the most visited parks in absolute terms were once again Teide (3,289,444 visitors), Sierra de Guadarrama (2,815,024 visitors) and Picos de Europa (1,913,858 visitors). The parks with the fewest number of visits were Cabañeros (100,993 visitors) and Cabrera Archipiélago (120,505 visitors).

So as to obtain a realistic picture, the analysis of the evolution of the number of visitors to National Parks must be complemented with the area of these protected spaces. Considering both variables as a whole, we can obtain a clear perspective of the pressure these areas may be subject to as a consequence of tourism.

Area and visitors to National Parks. Year 2015

NPs	Surface area (ha)	No. of visitors	No. of visitors/ha
Aigüestortes	14,119	525,067	37.19
Archipiélago de Cabrera	10,021	120,505	12.03
Cabañeros	40,856	100,993	2.47
Caldera de Taburiente	4,690	445,084	94.90
Doñana	54,252	300,287	5.54
Garajonay	3,984	828,758	208.02
Islas Atlánticas de Galicia	8,480	399,890	47.16
Monfragüe	18,396	288,644	15.69
Ordesa y Monte Perdido	15,608	598,950	38.37
Picos de Europa	67,127	1,913,858	28.51
Sierra de Guadarrama	33,960	2,815,024	82.89
Sierra Nevada	86,208	780,702	9.06
Tablas Daimiel	3,030	192,025	63.37
Teide	18,900	3,289,444	174.04
Timanfaya	5,107	1,655,772	324.22
Total	384,738	14,255,003	36.99 (average)

Source: Autonomous Authority for National Parks. MAGRAMA, 2015

The ratio of the number of visitors per hectare shows that three National Parks, all located in the Canary Islands, clearly stand out: Timanfaya (324 visitors/hectare), Garajonay (208 visitors/hectare) and Teide (174 visitors/hectare). At the other end of the spectrum we can find the National Parks of Cabañeros (2 visitors/hectare), Doñana (5 visitors/hectare) and Sierra Nevada (9 visitors/hectare), where the pressure is lower due to the level of tourism received. The average number of visitors in all the Network of National Parks is 37 visitors/hectare approximately.

Definition of the Indicator:

This indicator studies the annual evolution in absolute and relative terms (based on the area of the parks) of the number of visitors to the different spaces that make up the Network of National Parks.

Methodological Notes:

The information on the number of visitors to Sierra de Guadarrama National Park in the year 2015 is an estimate: this national park has not provided an official figure on the number of visitors received this year, so the table includes the information corresponding to 2014.

In 2015, the boundaries of the Picos de Europa National Park were extended as adjoining areas were added. As a consequence of this extension, its area increased by 2,467 hectares, amounting to a new total area of 67,127 hectares.

Source:

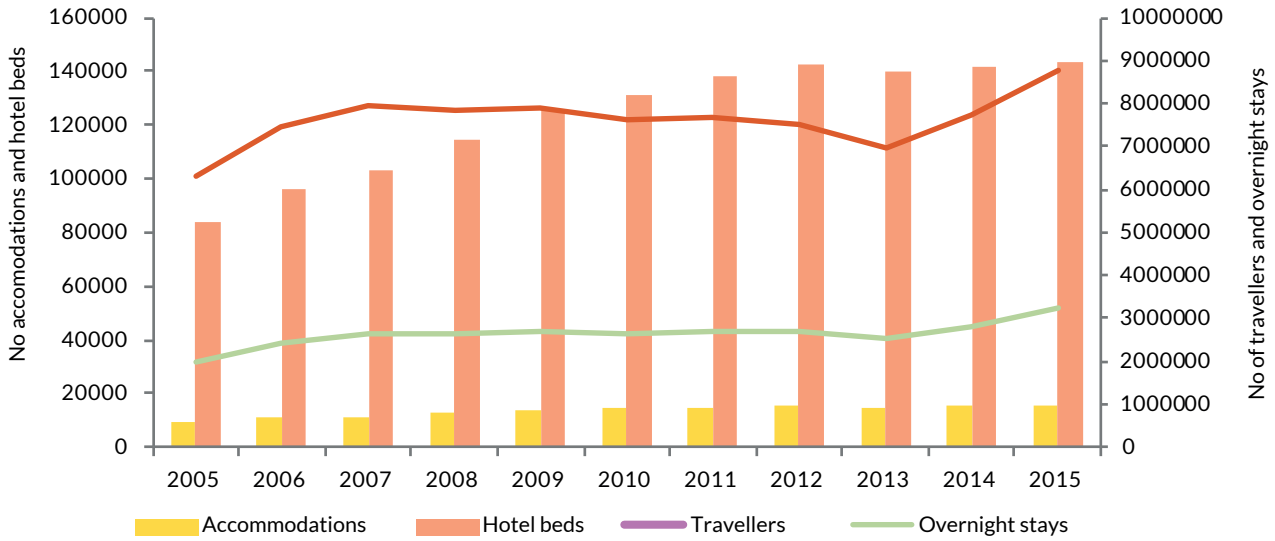
Data provided by the Autonomous Authority for National Parks, 2015.

Recommended Websites:

- http://www.magrama.gob.es/es/parques-nacionales-oapn

Rural Tourism: Accommodation, Capacity, Tourists and Overnight Stays

Rural Tourism 2005-2015



Source: INE

- ***All rural tourism indicators (accommodation, capacity, overnight stays and travellers) have experienced positive year-on-year variation rates in 2015 as compared to 2014***
- ***Their evolution during the last decade has also been positive***

In 2015, the change in the trend which started in 2014 corresponding to all indicators related to the evolution of rural tourism in Spain was confirmed.

The number of rural accommodation units increased by 0.5% in 2014, following the trend started during the previous year, from 15,221 in 2014 to 15,305 establishments (with an average stay of 2.7 days) and the capacity increased by 1.1% from 141,478 in 2014 to 142,994.

The number of overnight stays increased by 12.8%, amounting to 8.7 million in 2015; the number of travellers increased by 14.1%, reaching 3.2 million. That same year, the number of jobs generated by the sector reached 21,971, 0.7% more than the previous year.

The evolution of the indicators is also positive if the period under analysis covers the last 10 years. During the ten-year period 2005-2015 rural accommodations in Spain increased by 58.9%, capacity increased by 70.4% and the number of overnight stays experienced an increase of 38.7%. In the same period, the number of travellers grew by 62.5%.

As compared to the previous year, the trend is a positive one when information is analysed as a whole; however, there are differences when the different autonomous communities are broken down and analysed individually.

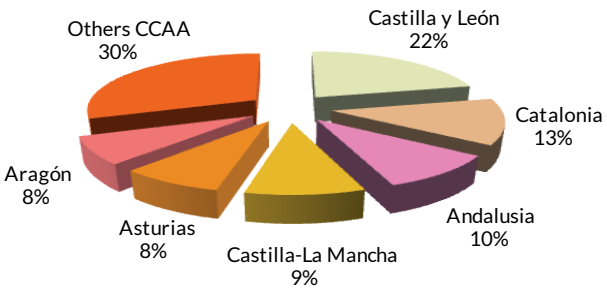
For example, according to the provisional data included in the Rural Tourism Accommodation Occupancy Survey, in 2015, the number of rural accommodations decreased as compared to 2014 in Madrid (-3.09%), Galicia (-3.08%), Asturias (-2.59%), Castilla y León (-2.42%), Andalusia (-1.63%) and C. Valencia (-1.44%). However, during that same year, the number of travellers increased in all autonomous communities with the exception of Madrid (where it decreased by 4.15%) and the number of overnight stays increased in all without exception.

Regarding the number of beds, the communities with the highest numbers in 2015 were Castilla y León (28,818 beds), Catalonia (16,001), Andalusia (13,183), Castilla-La Mancha (12,682), Asturias (11,789) and C. Valencia (9,283). Overall, these communities amounted to 64.2% of the total beds offered in Spain.

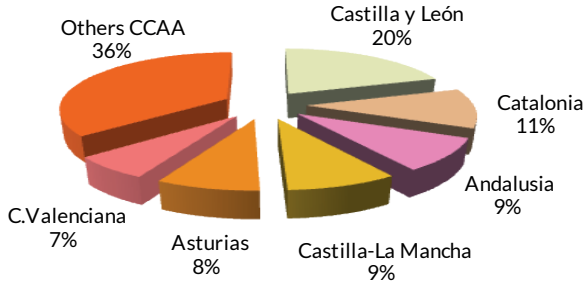
Regarding the number of vistors to rural tourism destinations in 2015, Castilla y León was once again the community with the highest number (642,251), followed by Catalonia (378,740) and Andalusia (224,346). La Rioja and Murcia (31,186 and 35,616 travellers respectively) were the autonomous communities with the lowest number of visitors, although both experienced a very positive year-on-year evolution (+32.5% and +21.6%).

Finally, based on the number of overnight stays, Castilla y León, together with Catalonia and the Balearic Islands, were the autonomous communities with the highest figures (1,418,651, 1,060,772 and 823,620 respectively). Once again, La Rioja, with 72,543 overnight stays, was the autonomous community showing the lowest figure, although it experienced a strong increase (+30.6%) with respect to the previous year.

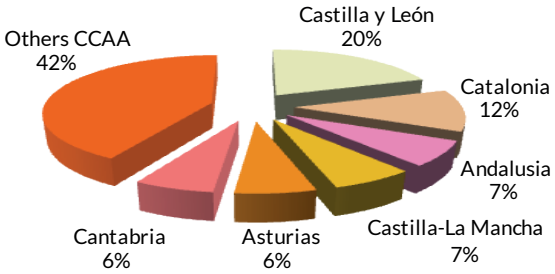
Distribution of the number of rural tourism accommodation units (2015)



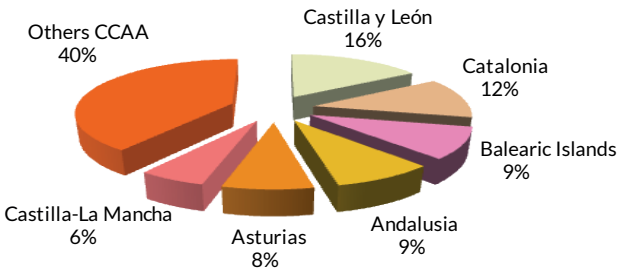
Distribution of the number of rural tourism beds (2015)



Distribution of the number of rural tourism travellers (2015)



Distribution of the number of rural tourism overnight stays (2015)



Source: INE

Definition of the Indicator:

The indicator shows the evolution of the main variables for rural tourism: number of establishments, number of beds, number of overnight stays in rural tourism accommodation units and number of travellers.

Methodological Notes:

Rural tourism accommodation is integrated by those establishments or residences 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).

Source:

INE. Rural Tourism Accommodation Occupancy Survey.

Recommended Websites:

- http://www.ine.es/jaxi/menu.do?type=pcaxis&path=%2Ft11%2Fe162eotr&file=inebase&L=0

2.16 TRANSPORT

The transport sector is one of the most important to society and the economy, both as a consequence of its own activities and of its impact on the other economic sectors. It is a key driving force for the economy in the European Union since it contributes 4.8% of the gross value added (548,000 million euros) and it is a fundamental cornerstone for employment providing more than 11 million jobs. Its environmental impact is remarkable and it includes, among others, aspects such as the occupation and fragmentation of the territory due to the infrastructures it requires, as well as congestion in cities, pollution it generates and its impact on health and other global issues such as global warming and, of course, the social impact of traffic accidents. Therefore, the European Commission is interested in promoting the development of efficient, safe and sustainable transport policies.

In line with this, Spain has implemented initiatives and several public policies. The Ministry of Public Works is promoting the “Infrastructure, Transport and Housing Plan 2012-2024” (PITVI, as per the Spanish acronym), based on the “Environmental Sustainability Report” (ISA, as per the Spanish acronym); the instrument used for management and the analysis of the sector is the “Spanish Transport and Logistics Observatory” (OTLE, as per the Spanish acronym), whose third annual report (“Annual Report 2015”) was published in February 2016.

The Ministry of Agriculture and Fisheries, Food and Environment has developed the "National Plan for Air Quality and Atmosphere Protection 2013-2016" (AIRE Plan), the reference framework for the improvement of air quality in Spain by means of horizontal and sectoral measures which include transport, as well as the "Clima Projects" which aim to reduce GHG emissions in the so-called "diffuse sectors", among which we can find land and sea transport (an important portion of air transport is subject to the emission trading scheme).

We must also highlight the implementation during 2015 of the Plan for the Promotion of the Environment, "PIMA Transport", an initiative aimed at the renovation of buses and vehicles for heavy cargo. Royal Decree 1081/2014, approved in December 2014, regulates the granting of subsidies the purpose of which is to significantly reduce CO_2 emissions, air pollutants and the consumption of fuel from an old

vehicle fleet.

The Ministry of Industry, Energy and Tourism develops the Efficient Vehicle Incentive Programme (PIVE, as per the Spanish acronym), which has already had eight aid schemes between 2012 and 2015 with a budget of 1,115 M€. Its purpose is to promote the renovation of the vehicle fleet (one of the measures considered for the reduction of energy consumption, with positive additional effects on the environment and on road safety) and to boost the automotive sector; at the end of this edition (extended until 2016) 1,185,000 vehicles are expected to be replaced, thus achieving a reduction of emissions amounting to 850,000 tonnes of CO_2.

Regarding the PIVE Plan, in 2015 MINETUR and MAGRAMA adopted a new approach for the renewal of the vehicle fleet by integrating certain contents of their programmes into the new "Plan for the Promotion of Vehicles Running on Alternative Energy" (MOVEA, as per the Spanish acronym). In contrast with traditional fossil fuels, vehicles running on alternative energies (electricity, hydrogen, bio-fuel, synthetic and paraffinic fuels, natural gas, biomethane and liquefied petroleum gas) are going to be part of sustainable mobility. Its advantages are energy diversification and reduced dependency on oil products, as well as the reduction of polluting emissions thus contributing to the improvement of air quality in cities and the reduction of noise pollution while promoting the consumption of clean energy, particularly from renewable sources. Therefore, within the framework of the "Strategy for the Promotion of the Electric Vehicle (VEA, as per the Spanish acronym) in Spain (2014-2020)" and in order to facilitate the implementation of Directive 2014/94/EU, the MOVEA Plan includes subsidies for the acquisition of vehicles running on alternative energies and the implementation of charging points for electric vehicles.

In general terms, it must be taken into account that in our country this activity generates more than 4% of national GVA and almost 5% of employment. However, the sector has suffered the effects of the crisis which affected transport demand, particularly in cargo transport (since it is more closely related to economic activity than passenger transport) and, as a consequence, it has also affected the energy consumption in the sector (the one with the highest demand at a national level, especially road transport). Both variables have decreased since then, increasing again slightly in 2014.

The policies developed and improvements applied to management, technologies and fuels led to a decrease of polluting emissions in recent years. However, it must be highlighted that all these advances can still be improved as regards energy efficiency and the emission of pollutants.

Demand for inter-city passenger and cargo transport

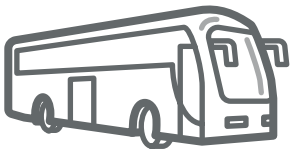
- Between 2007 and 2014, the demand for domestic transport decreased by 27.6% for cargo and by 11.1% for passengers; in 2014, the reduction was 2.4% for passengers but it increased by 2.9% for cargo.
- The most in-demand means of transport was by road, both for passengers (87.8% in 2014) and for cargo (79.8% in 2014).
- Air transport came 2nd or 3rd for the transport of passengers (depending on the year), but it is negligible for the transport of cargo (0.02% of t-km transported in 2014).

Passenger vehicle fleet by fuel type

- Passenger cars running on diesel have surpassed those on petrol since 2009; in 2014, the former amounted to 56% of the Spanish passenger car fleet.
- The number of hybrid cars in 2014 stands at almost 56,000; the total number of cars with electric technologies represents 0.27% of the fleet.

Environmental efficiency of transport in terms of GVA, demand, emissions to the atmosphere and energy consumption

- The GVA of transport increased by 70% between 2000 and 2014, whereas the energy consumption of the sector decreased by 3.9%.
- Emissions of pollutants also decreased. However, its reduction is lower than energy consumption, with a progressively increasing differential.



Emission of air pollutants from transport

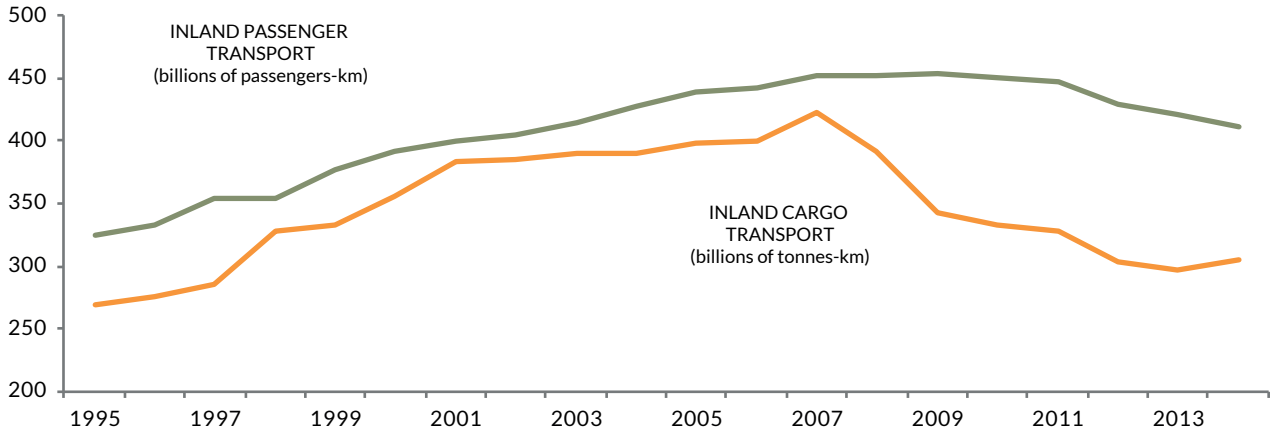
- Acidifying and ozone precursor emissions decreased significantly between 1990 and 2014.
- GHG emissions, more closely related to the consumption of fuels and, therefore, to economic activity, had been on the decrease since 2008, slightly increasing again in 2014.
- CO_2 average emissions of new passenger cars in Spain (grams/km) decreased by 27.5% between 2001 and 2015.

Final Energy Consumption of Transport

- The transport sector has the highest final energy consumption, with an approximate rate of 28% of the total. 2014 was the first year with a year-on-year increase (0.8%) after the decrease initiated in 2008.
- 90% of energy consumption of the sector corresponds to road transport (93.7% in 2014). Air transport represents 4% (3.2% in 2014).

Demand for inter-city transport: passengers and cargo

Total volume of inter-city transport



Source: Ministry of Public Works

- *Between 2007 and 2014, the demand for domestic transport decreased by 27.6% for cargo and by 11.1% for passengers; in 2014, the reduction was 2.4% for passengers but it increased by 2.9% for cargo*
- *The most in-demand means of transport was by road, both for passengers (87.8% in 2014) and for cargo (79.8% in 2014)*
- *Air transport came 2nd or 3rd for the transport of passengers (depending on the year), but it is negligible for the transport of cargo (0.02% of t-km transported in 2014)*

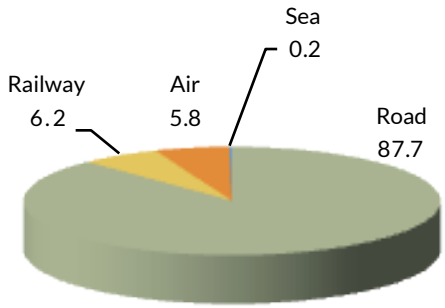
The demand for inter-city transport in Spain is associated with the economic situation, so during periods of crisis, characterised by a reduction in economic activity (both domestic and international consumption), traffic volumes usually decrease. This correlation is even stronger in the case of cargo traffic, since it is directly associated with economic activity whereas in the case of passenger transport, trend changes are less marked.

Therefore, and as a consequence of the 2001-2002 recession and the one commencing in 2008, in 2002 cargo transport went from a clearly upward trend to virtually a standstill until the upturn in 2007, which was the year in which the maximum figure for annual volume of cargo transported was reached. The ascending trend in passenger transport barely altered during the period, until its peak in 2009 (with a slight decrease in 2008). Since those maximum figures, there has been a downward trend, particularly marked in cargo transport (which fell by 27.6% between 2007 and 2014 whereas passenger transport fell by 11.1%). In 2014, however, cargo transport experienced an increase of 2.9% in relation to 2013 as compared with a decrease of 2.4% in passenger transport.

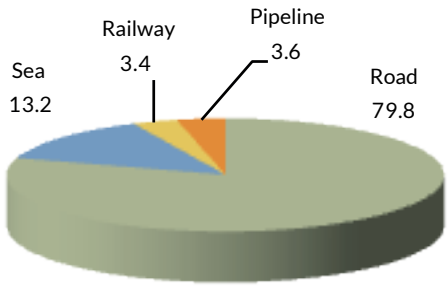
Regarding distribution by means of transport, road transport is the main means, historically representing around 80% of traffic, with participation slightly higher for passengers than for cargo, with percentages in 2014 of 87.8% for passengers and 79.8% for cargo.

As regards other means of transport, rail transport is the only one with significant participation data both for cargo and for passengers; in 2014, cargo transport represented 3.4% of t-km transported and passenger transport represented 6.2% of travellers-km, disputing the second position, depending on the year, with air transport. In 2014, air transport was the third most significant means of passenger transport according to the traveller-km ratio, representing 5.8%; however, cargo transport by air was insignificant (0.02% of t-km transported in 2014). Maritime transport shows the opposite trend; for cargo it is the second ranked means of transport per t-km, with a percentage of 13.2% in 2014, whereas its contribution in the transport of passengers is small (0.2% of travellers-km). As regards cargo, pipeline transport must also be considered; since 2005 it has replaced railway as the third means of transport in relation to the volume of t-km transported, with 3.6% of the total in 2014.

Distribution of means of inland passenger transport. 2014 (%)



Distribution of means of inland cargo transport. 2014 (%)



Source: Ministry of Public Works

The evolution of inter-city transport in the last year shows that in 2014 all traffic increased with the exception of passenger transport by road and sea.

Cargo transport increased in all means of transport; by 2.7% in the main ones (road and sea); by 1.3% in pipeline transport and by a remarkable 10% by railway.

As regards passenger transport, road was the main means of chosen, with a decrease of 3.0%, giving an overall decrease in passenger traffic (of 2.4% in 2014) despite the increases in railway (5.5%) and air traffic (1.5%).

Regarding domestic air transport, 2014 was the first year in which such traffic increased after having decreased for three years. This situation remains unchanged in 2015; the number of operations increased by 3% (1.9% in 2014) and the number of passengers increased by 6.4% (2% in 2014).

The total demand for passenger transport in the EU-28 increased by 1.1% in 2013, after a slightly downward trend from its peak in 2009. The distribution by means of transport of this demand has barely changed: road transport is the main means of with a participation of over 80%; air transport maintains its pre-recession percentage at 9%, despite demand increasing by 10% in 2011 (it stabilised in 2012 and 2013); and that non-metropolitan railway transport increased slightly in recent years, representing 6.6% of passenger demand in 2013.

The total demand for cargo transport remained stable in 2013, after a decrease of 2% in 2012. Maritime transport fell by 2% , the amount by which inland waterway transport increased; road transport increased by 1.6%; air transport decreased by 1% and railway transport remained stable. The model by means of transport shows the following approximate distribution (pipeline transport not included): more than 50% corresponds to road transport, 33% to maritime, 4.5% to inland waterway and 12% to railway.

Definition of the Indicator:

This indicator shows the annual pattern in the demand for domestic passenger traffic, measured in passenger-kilometre (p-km) and merchandise, measured in tonnes-kilometre (t-km).

Methodological Notes:

- The unit of measurement used for passenger traffic is passenger-kilometre (p-km) 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 (t-km), calculated by multiplying the number of tonnes transported by the number of kilometres travelled.
- The road information for 2014 refers to the 166,284 kilometres managed by the State, autonomous communities, Provincial and Municipal Councils.
- The information on the number of operations and the number of passengers regarding air transport refers to regular and non-regular commercial flights (statistical information by the Min. of Public Works).

Source:

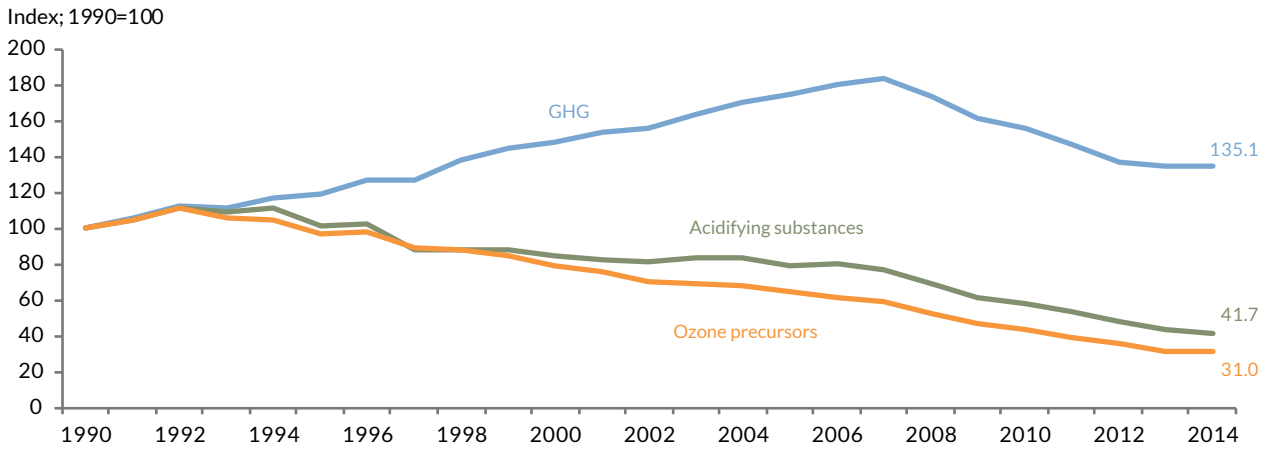
Ministry of Public Works "Transport and Infrastructure. Annual Report". Various years.

Recommended Websites:

- http://observatoriotransporte.fomento.es/OTLE/lang_castellano/
- http://www.fomento.gob.es/MFOM/LANG_CASTELLANO/ATENCION_CIUDADANO/INFORMACION_ESTADISTICA/
- http://www.eea.europa.eu//publications/term-report-2015

Emission of air pollutants from transport

Transport-related GHG emissions, acidifying substances and tropospheric ozone precursors. In transport



Source: MAGRAMA

- *Acidifying and ozone precursor emissions decreased significantly between 1990 and 2014*
- *GHG emissions, more closely related to the consumption of fuels and, therefore, to economic activity, have been decreasing since 2008, slightly increasing again in 2014*
- *CO2 average emissions of new passenger cars in Spain (grams/km) decreased by 27.5% between 2001 and 2015*

Transport is one of the sectors with the highest contributions to the emissions of air pollutants in Spain: regarding greenhouse gases (GHG), the sector represents an average of approximately 25% of total national emissions, road transport being the main factor with around 90% of emissions of the sector.

By type of pollutant, the evolution of GHG emissions, less dependent on engine technologies than other pollutants, is similar to that of fuel consumption: upward trend until 2007 and downward trend due to the effects of the economic crisis from 2008. In 2013, this decrease lost its intensity leading to a slight upturn in 2014. The rest of the polluting emissions have followed a general downward trend since 1992, leading to today's emissions being slightly lower than those in 1990.

By periods, between the years 1990 and 2014, GHG emissions experienced an accumulated increase of 35.1% as a consequence of the decrease of recent years after a continuous increase up to the peak of 2007 (increase of 84.0% with respect to 1990); acidifying emissions decreased by 58.3% and the emissions of tropospheric ozone precursors by 69%. Over the last ten years (2005-2014), GHG emissions decreased by 22.7%, acidifying gases emissions by 47.1% and tropospheric ozone precursors by 52.2%. In the last year (2014), due to the recovery of the economic activity, we can see a slight increase in emissions: GHG emissions increased by 0.5%, acidifying gas emissions decreased by 4.9% and tropospheric ozone precursors by 3.2% (decrease percentages lower than those of previous years).

Within the European framework, the regulation on contaminating emissions is even more strict. In order to fight global warming, by virtue of Regulation (EC) no. 443/2009 for the monitoring of CO_2 emissions (and its amendments), the European Union has established CO_2 emission limits for newly registered cars: 135 g CO_2/km in 2014, 130 g CO_2/km in 2015, 120 gr CO_2/km in 2016 and 95 gr of CO_2/km in 2020.

According to Note of 14/04/2016 by the European Environment Agency ("*CO_2 emissions of new cars are still dropping*"), the average CO_2 of new passenger cars sold in the EU-28 in 2015 was 119.6 g CO_2/km, 8% lower than the target established and 3% lower than the previous year. In Spain these values are lower since average emissions from new passenger cars were 115.3 g of CO_2/km, a figure lower than that of 2014 (118.6 g of CO_2/km) and 27.5% lower than that of 2001.

Definition of the Indicator:

The indicator shows aggregated pollutant emissions into the atmosphere originating from domestic transport in Spain, presented as an index in which the value of year 2000 = 100. GHG, acidifying and ozone precursor emissions are included.

Methodological Notes:

- The most important pollutant emissions into the atmosphere produced by transport activities, be it for toxicity or damage to health or for environmental effects are grouped together: greenhouse gases (GHG), acidifying and eutrophying gases and tropospheric ozone precursors. GHG emissions (CO_2, CH_4 and N_2O), are expressed in equivalent CO_2, calculated based on the global warming potential of each gas, with the following factors: CO_2 = 1, CH_4 = 25 and N_2O = 298. Acidifying and eutrophying gas (NO_x, NH_3 y SO_2) emissions are expressed in acid equivalents (potential for hydrogen production), including the emissions weighted according to the following factors: 31.25 acid equivalents/kg for SO_2 (2.64 acid equivalents/gram), 21.74 acid equivalents/kg for NO_X, expressed as NO_2, (1/46 acid equivalents/g) and 58.82 acid equivalents/kg for NH_3 (1/17 acid equivalents/gram). Emissions of tropospheric ozone precursors (NMVOCs, NO_x, CO, and CH_4) have been calculated based on the reduction potential of tropospheric ozone (expressed in NMVOCs equivalent); for the calculation, the following factors have been used: 1.00 for NMVOCs, 1.22 for NO_x, 0.11 for CO, and 0.014 for CH_4.
- The emissions resulting from the following SNAP categories (Selected Nomenclature for Sources of Air Pollution), within the following groups are linked to the transport sector: 7 (road transport), 08 02 (railways), 08 04 02 (domestic sea traffic within the EMEP area), 08 05 01 and 08 05 03 (domestic air traffic) and 01 05 06 (compressors for pipeline transport).

Source:

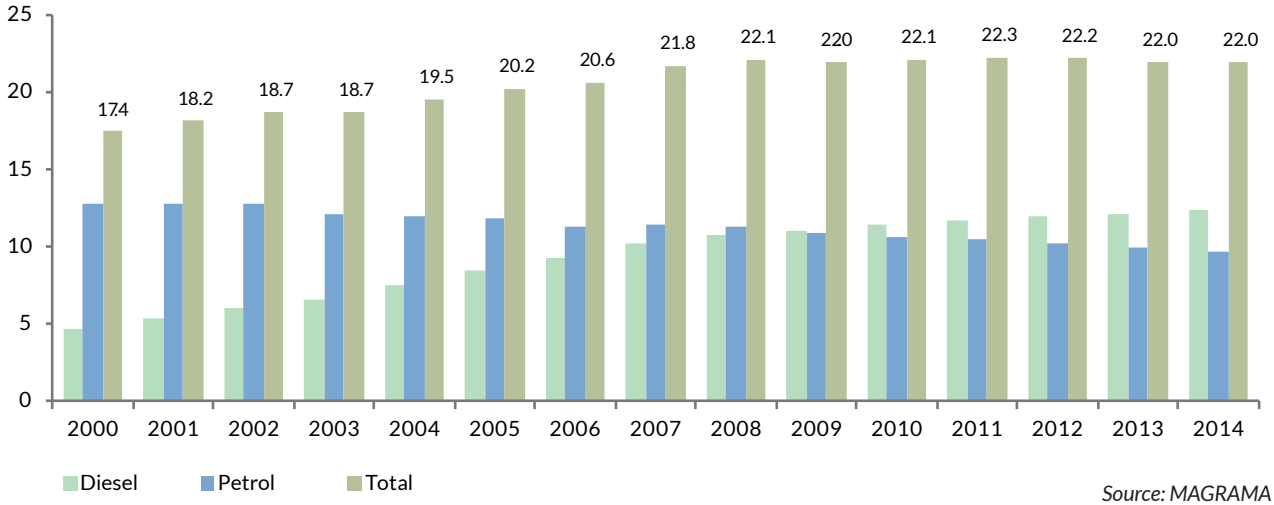
- Ministry of Agriculture, Food and the Environment, 2016: "Spanish Inventory of Greenhouse Gases. Years 1990-2014", May 2016; "Inventory to CLRTAP-EMEP Submission (in 2016) of air emissions data foreseen under the CLRTAP convention for the time series 1900-2014", March 2016 (Information available at EIONET Central Data Repository).
- European Environment Agency, "Reported CO2 emissions from new cars continue to fall" Highlight Published 14 Apr 2016: http://www.eea.europa.eu/highlights/reported-co2-emissions-from-new

Recommended Websites:

- http://cdr.eionet.europa.eu/es/eu/mmr/art07_inventory/ghg_inventory/envvuhnga
- http://cdr.eionet.europa.eu/es/un/UNECE_CLRTAP_ES/envvubzaw/
- http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/sistema-espanol-de-inventario-sei-/
- http://www.eea.europa.eu/publications/term-report-2015
- http://www.eea.europa.eu//publications/monitoring-emissions-cars-and-vans

Passenger vehicle fleet by fuel type

Private car population according to type of engine (millions of vehicles)



Source: MAGRAMA

- *Passenger cars running on diesel have surpassed those on petrol since 2009; in 2014, the former amounted to 56% of the Spanish passenger car fleet*
- *The number of hybrid cars in 2014 stands at almost 56,000; the total number of cars with electric technologies represents 0.27% of the fleet*

The trend of the structure of the passenger car fleet in Spain by fuel type has remained unvaried for several years; therefore, since 2000 the passenger car fleet running on petrol has been decreasing (exceptions being years 2001 and 2007); however, the passenger car fleet running on diesel has been continuously increasing. The number of diesel cars surpassed the number of petrol cars for the first time in 2009, the year in which the total vehicle fleet stabilised (in 2014 the fleet was almost the same as in 2009).

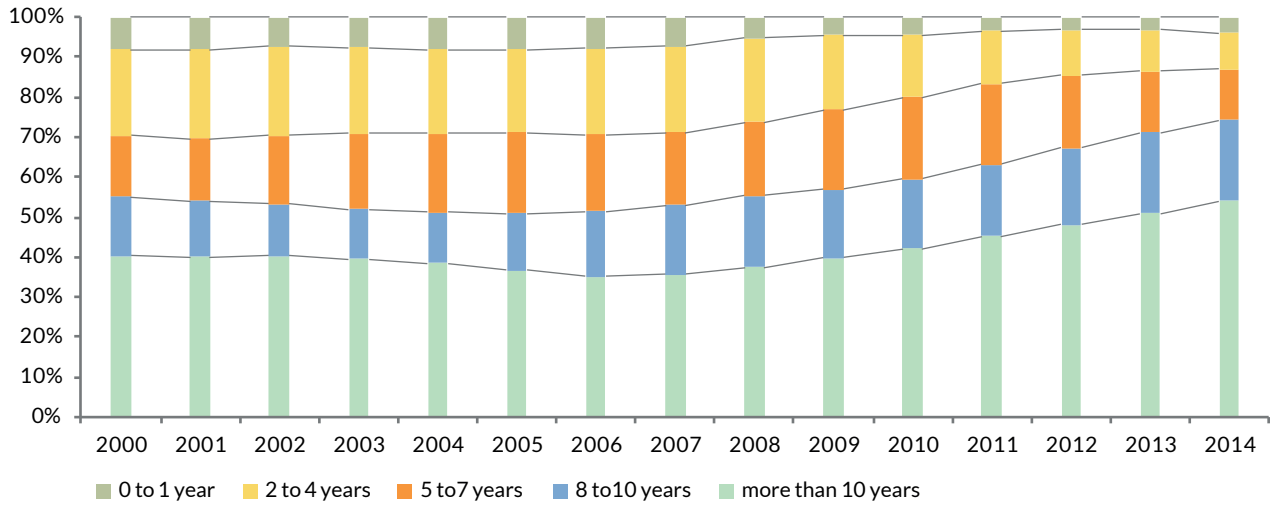
Between 2000 and 2014, the passenger car fleet increased by 25.9%. Whereas the fleet of petrol vehicles decreased by 24.4%, from 73.1% of the total fleet to 43.9%, the fleet of diesel vehicles increased by 162.1%, doubling its percentage in the total fleet (from 26.7% to 56.1%). In the last five years in which the total fleet has remained virtually unvaried (period 2010-2014 with a decrease of 0.7%), the number of petrol cares fell by 9.6% whereas diesel cars increased by 7.5%. In 2014 (the year in which the fleet decreased by just 0.1%), petrol cars decreased by 2.9% whereas diesel cars increased by 2.2%.

The importance of diesel vehicles in Spain is remarkable; even though the purchase and maintenance cost of these vehicles is higher, their fuel consumption is lower, plus the price of diesel is lower than that of petrol.

Emissions of the sector show a downward trend due to the improvement in technology and in fuels. We must also mention the development of hybrid vehicles, which offer lower average consumptions; the fleet of which, increasing at high rates from 2005, reached approximately 56,000 units in 2014 (mainly with petrol). Electric

vehicles are better from an environmental perspective but their number is lower, with 3,000 vehicles in 2014. In combination, both electric technologies represented only 0.27% of the total passenger car fleet.

Passenger vehicle fleet by age (% total)



Source: MAGRAMA

The progressive renovation of the car fleet and the implementation of the Euro standards (regulating the emission of pollutants from new vehicles with increasingly stringent limits) is resulting in a reduction of emissions. Since 2008, this renovation, which mainly affects the oldest vehicles of the fleet, shows a downward trend due to the recession, although it has started to increase since 2013, presumably due to PIVE plans.

In Europe (33 countries plus Turkey), the evolution of the passenger car fleet is similar to that of Spain; however, the participation of diesel vehicles is lower, amounting to slightly more than half that in Spain (in 2012 the diesel car fleet in the EU amounted to 29.2% of the total, in comparison to the 53.7% in Spain).

Definition of the Indicator:

The indicator describes the number and proportion of passenger vehicles that make up the passenger vehicle fleet based on the fuel type used by the engine (diesel/gasoil or petrol).

Source:

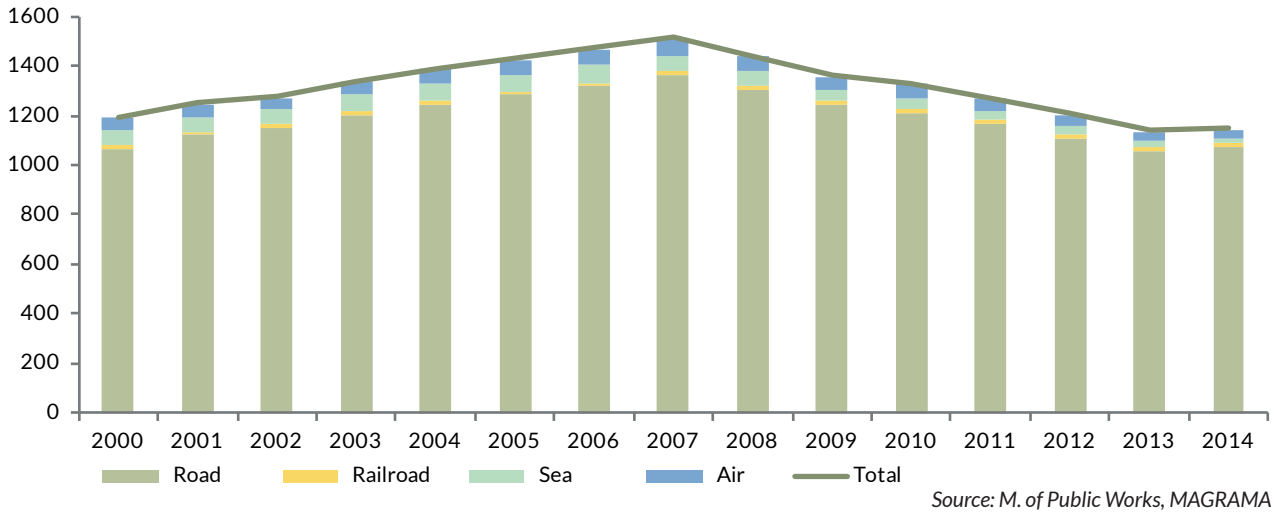
Ministry of Agriculture, Food and the Environment, 2016: "Spanish Inventory of Greenhouse Gases. Years 1990-2014", May 2016.

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/
- https://sedeapl.dgt.gob.es/WEB_IEST_CONSULTA/inicio.faces; https://sedeapl.dgt.gob.es/WEB_IEST_CONSULTA/informePersonalizado.faces
- http://ec.europa.eu/eurostat/web/transport/data/database

Final Energy Consumption of Transport

Final energy consumption of transport (PJ)



Source: M. of Public Works, MAGRAMA

- *The transport sector has among the highest levels of final energy consumption, with an approximate rate of 28% of the total. 2014 was the first year with a year-on-year increase (0.8%) after the decrease initiated in 2008*
- *90% of energy consumption in the sector corresponds to road transport (93.7% in 2014). Air transport represents 4% (3.2% in 2014)*

The transport sector in Spain is among those with the highest final energy consumption, with an approximate 28% of the total in recent years (28.4% in 2014). In absolute terms, its energy consumption has been increasing since 2000 and until 2008, the year in which, after an accumulated increase amounting to 26.7%, a decrease associated with the economic crisis started; in 2014, the first upturn occurred (0.8% on 2013); therefore, the energy consumption of the sector rose to 3.9%, still lower than that of 2000.

This behaviour results from the development of mobility and traffic associated with the economic situation, which were explained when dealing with the indicator "demand for inter-city transport".

The same guidelines may be followed to establish the distribution of energy consumption by means of transport. Such distribution is rather stable, with a percentage amounting to 90% for road and 4% for air transport, although the latter shows a lower share in recent years. In 2014, consumption corresponding to road transport decreased by 0.6% as compared to 2000; however, it represented 93.7% of total consumption of the sector in 2014. The percentage of the consumption of air transport has been decreasing since 2008, with a reduction of 28.6% on 2000, representing 3.2% of total consumption in the sector in 2014. Rail transport showed a slight upward trend, with figures around 1%, reaching 1.5% in 2014 (with a consumption 22.3% higher than that of 2000). On the other hand, maritime transport showed a clear upward trend since 2007, from a percentage amounting to 4.8% in 2006 to 1.2% in 2014; consumption rose to 22.3% in respect of 2000.

Distribution of energy consumption by means of transport (%)

	Road	Rail	Sea	Air
2000	89.5	1.2	4.9	4.3
2014	93.7	1.5	1.2	3.2

Note: The contribution of pipeline transport is not included, which in 2000 represented 0.2% and in 2014, 0.4%

Source: M. of Public Works, MAGRAMA

Within the framework of the EU-28, in 2014 Spain ranked fifth as regards consumption with 9.1% of all energy used in transport; in the period 2000-2014 it was the country with the fourth highest reduction in energy consumption in the sector with a decrease of 3.8%, as compared to the increase of 2.2% across the EU-28 (only nine countries reduced their consumption).

Definition of the Indicator:

Final energy consumption of domestic transport. This data only includes energy consumption and excludes non-energy consumption. This final energy consumption is presented for the following means of transport: road, rail, maritime, air and pipeline transport and other (non-significant).

Methodological Notes:

- Energy sources consumed in the transport sector, besides those which are not specified and other minor consumptions, are the following:
  - Carbons: none.
  - Oil products: in road transport, LPG, petrol, diesel; in rail transport, diesel; in sea transport, diesel and fuel oil; in air transport, kerosene; in pipeline transport, LPG, diesel.
  - Gases: in road transport and pipeline transport, natural gas.
  - Renewable energies: in road transport, bio-fuels.
  - Electric energy: in rail transport.

Source:

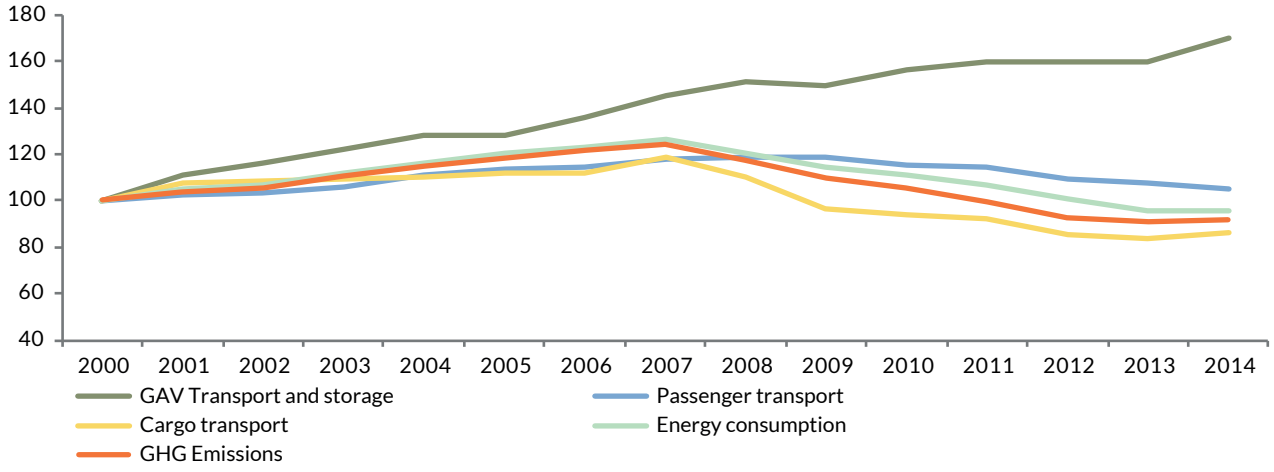
Spanish Transport and Logistics Observatory (OTLE): statistics on the "Energy consumption of the transport sector by means of transport, fuel type and traffic type (domestic and international)" 1990-2013; prepared based on the information from MAGRAMA (National Inventory of Polluting Emissions into the Atmosphere) for fuels and from the Ministry of Public Works ("Transport and Infrastructure. Annual Report", various years) for electricity. For 2014, we collected information directly from these sources; electricity was estimated based on provisional data.

Recommended Websites:

- http://observatoriotransporte.fomento.es/BDOTLE/visorBDpop.aspx?i=314
- http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/sistema-espanol-de-inventario-sei-/
- http://www.fomento.gob.es/MFOM/LANG_CASTELLANO/ATENCION_CIUDADANO/INFORMACION_ESTADISTICA/
- http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tsdpc320

Environmental efficiency of transport in terms of GVA, transport demand, atmosphere emissions and final energy consumption

Main transport variables: Passenger and cargo transport, energy consumption, GHG and VAB emissions (Index 2000=100)



Source: Ministry of Public Works, INE, Eurostat and MAGRAMA

- *The GVA of transport increased by 70% between 2000 and 2014, whereas the energy consumption in the sector decreased by 3.9%*
- *Emissions of pollutants also decreased. However, its reduction is lower than energy consumption, with a progressively increasing differential*

The efficiency of the transport sector as regards the correlation between its activity, energy consumption, environmental impact and economic implications may be analysed by means of the following variables.

Transport activity, based on traffic (travellers-kilometre and tonnes-kilometre), is associated with economic activity, with the strongest correlation in the case of cargo transport and slightly less marked and immediate in the case of passengers. Therefore, as regards cargo transport, after traffic peaked in 2007, it started a downward trend the following year until, in 2014, it reached levels amounting to 86% of that for the year 2000 (despite the increase in 2014). The evolution of passenger transport is similar but less marked. In 2014, traffic was 5% higher than in 2000.

The evolution of energy consumption matches traffic evolution; it is more similar in the case of cargo transport due to its higher relevance in the contribution to consumptions. Energy consumption levels in 2014 amounted to 96.1% of 2000 levels.

The evolution of pollutants is very similar to that of the energy consumption; however, it shows a slight downward trend with respect to consumption: as regards greenhouse gases (GHG), emission levels in 2014 amounted to 91.6% of levels in 2000, lower than those of consumption. The differential between both variables shows a slight increase over the years. In the case of other pollutants which are more dependant on

technology than GHG, the effect is more marked: acidifying gas emissions in 2014 amounted to 49.3% of those of 2000 and the emissions of tropospheric ozone precursors amounted to 39.2% of the corresponding levels in 2000. This information shows a growing environmental efficiency of the transport sector thanks to circumstances such as the improvements in efficiency associated with traffic management, fuel and private vehicles, which have been important factors contributing to this dynamic. Another key factor is the renewal of the vehicle fleet. In this regard, we must highlight the aid programmes for the acquisition of more efficient new vehicles. Such programmes have contributed to the renewal of the fleet which has in turn led to energy savings and the reduction of polluting emissions.

Such efficiency is also noticeable in economic terms. Over these last few years of the economic crisis, there has been a decrease in the demand for cargo transport. On the other hand, demand for passenger transport has remained unchanged. Therefore, the pressure on the environment has decreased due to the reduction in the consumption of energy and polluting emissions into the atmosphere. Besides, the gross value added of the sector has been experiencing almost uninterrupted growth. In 2014, it was 70% higher than the value of 2000, with a particularly marked increase during the last year.

Definition of the Indicator:

The indicator covers several selected transport variables for the purposes of comparing their evolution with that of the Gross Value Added (GVA) of the sector, and to thus evaluate its trends and correlations between them so as to estimate the relative efficiency of certain aspects with respect to others (environmental, financial, etc.).

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, which is minor in Spain), air transport, logistics and activities related to transport and mailing and courier services. It includes the contribution to the GVA of mailing and courier activities as disaggregated data were not available.

Source:

- GVA: INE, 2015. Spanish National Accounting. INEbase / Economy / Economic Accounts / Spanish National Accounting. Base 2010 / Final detailed results 1995-2014.
- Passenger and cargo transport: Ministry of Public Works "Transport and Infrastructure. Annual Report". Many years.
- Emissions of pollutants: Ministry of Agriculture, Food and the Environment, 2016: "Spanish Inventory of Greenhouse Gases. Years 1990-2014", May 2016; "Inventory to CLRTAP-EMEP Submission (in 2016) of air emissions data foreseen under the CLRTAP convention for the time series 1900-2014", March 2016 (Information available at EIONET Central Data Repository).
- Final energy consumption: Spanish Transport and Logistics Observatory (OTLE, as per the Spanish acronym): statistics on the "Energy consumption of the transport sector by means of transport, fuel type and traffic type (domestic and international)" prepared based on the information from the MAGRAMA (National Inventory of Polluting Emissions into the Atmosphere) for fuels and from the Ministry of Public Works ("Transport and Infrastructure. Annual Report", several years) for electricity.

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- http://www.fomento.gob.es/MFOM/LANG_CASTELLANO/ATENCION_CIUDADANO/INFORMACION_ESTADISTICA/
- http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/sistema-espanol-de-inventario-sei-/
- http://observatoriotransporte.fomento.es/BDOTLE/visorBDpop.aspx?i=314
- http://www.eea.europa.eu/publications/term-report-2015

2.17 URBAN ENVIRONMENT AND HOUSEHOLDS

Due to the economic crisis, political and social agendas for urban areas had to be adapted so as to maintain the good quality of public services while protecting the environment and public health. In the case of public transport, it was thought that, since income decreased, the use of public transport would increase, so the relevant authorities improved its quality and coverage. However, the reality did not match these estimations: demand kept dropping in all services (trains, metro, trams and buses) and the need for expenditure containment became increasingly urgent. Therefore, the priority was the maintenance of the quality of the service with a reduction in costs. Therefore, measures on efficiency are favoured, such as the improvement of timetables, application of management measures or greater efficiency in the use of resources. Thanks to the application of this policy, in 2014 there was a slight variation in the trend, which seemed to be confirmed in 2015, with an increase in the investment figures in the sector.

This turn towards efficiency is in line with so-called “Smart Cities”, resulting from the compelling need to orientate our lives towards sustainability. These cities aim to reduce energy consumption and CO_2 emissions by means of the use of infrastructures, innovation and technology. In order to achieve such a goal, the Spanish Network of Smart Cities (RECI, as per the Spanish acronym) was created in June 2011, with the execution of the 'Manifest for Smart Cities. Innovation for progress'. Its purpose is to promote the exchange of experiences and collaborative work so as to develop a sustainable management model and to improve the quality of life of citizens, focusing on aspects such as energy savings, sustainable mobility, electronic administration, assistance for all people and security.

In 2015, the '1st Meeting of Smart Cities' of the Digital Agenda for Spain took place for the benefit of a total of 11 projects associated with 25 cities with more than 20,000 inhabitants located in Andalusia, Castilla-La Mancha and Extremadura. The investment related to the initiatives selected, currently being implemented, amount to 13.8 million euros.

The city of Murcia obtained the European Mobility Week Award 2015, an award granted by the European Commission to those local entities making major efforts to increase public awareness regarding the benefits of sustainable mobility and applying measures aimed at achieving more sustainable urban transport. The slogan of the 2015 Mobility Week was "Choose. Change. Combine. Your Mobility" and Spanish municipalities led the participation in this project from its very beginning, representing almost 20% of the European total (out of 1,873 participant cities, 378 were Spanish cities).

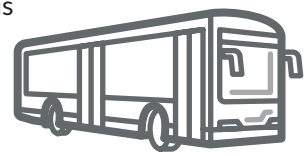
Urban Density by Autonomous Community and Autonomous City

- The population of Spain as of 1 January 2015 was 46,624,382 inhabitants, with 79.1% living in urban areas of over 10,000 inhabitants.
- Ceuta and Melilla and Madrid were the autonomous communities with the highest population and urban densities.
- In 2015, urban pressure reached 72.95 inhabitants per km^2, 0.3% lower than in 2014.

- Since the year 2000, urban density (or urban pressure) in Spain increased by 19.84%.

Urban Public Transport

- In comparison to cars, metropolitan transport consumes half the amount of energy; in the case of buses, this proportion is four times less.
- In 2015, the number of passengers using urban public transport increased by 1.4%, reaching 2,771,057.
- Madrid was the autonomous community with the highest number of passengers using urban bus services in 2015, with 456,808,000 passengers.



Final energy consumption per household

- The total consumption of Spanish households in 2014 was 14,692 ktoe, whereas consumption in the residential sector reached 14,713 ktoe.
- The greater part of consumption by households corresponded to natural gas, representing 21.05% of the total.
- The country of the EU-28 whose residential sector showed the highest reduction of final energy consumption in 2014 was the United Kingdom, by 14.21%.

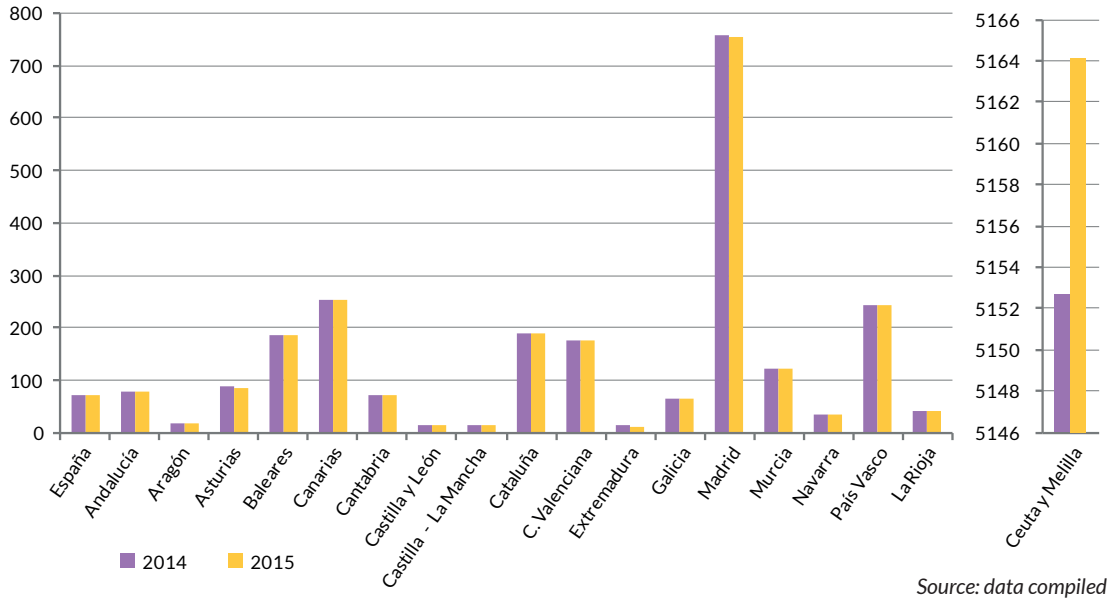
Household Expenditure

- Total Spanish household expenditure in 2015 amounted to € 503,815,862, 1.8% higher than the previous year.
- The autonomous community with the highest average household expenditure was the Basque Country, with € 33,318.44, 4.68% higher than in 2014.

- The average household expenditure in Spain increased for the first time since 2008, by 1.41%. However, between 2010 and 2015 it fell by 6.84%.

Urban Density by Autonomous Community and Autonomous City

Urban Density in Spain, autonomous communities and Autonomous Cities
Years 2014 and 2015 (inhab./km²)



Source: data compiled from INE

- *The population of Spain as of 1 January 2015 was 46,624,382 inhabitants, with 79.1% living in urban areas of over 10,000 inhabitants*
- *Ceuta and Melilla and Madrid were the autonomous communities with the highest population and urban densities*
- *In 2015, urban pressure reached 72.95 inhabitants per km², 0.3% lower than in 2014*
- *Since the year 2000, urban density (or urban pressure) in Spain increased by 19.84%*

According to the annual review of the population register as of January 1 2015, the Spanish population was 46,624,382 inhabitants, 0.32% lower than the previous year. According to the same register, 79.1% of the total population (36,907,893 inhabitants) live in areas with over 10,000 inhabitants, equivalent to urban areas; comparing data from 2015 and 2014, we can observe that the number of inhabitants living in this type of urban areas decreased by 94,423, 0.26%, even though the percentage with respect to the total population figure remains unchanged due to the aforementioned decrease in the total population.

Regarding population density in our country (relation between the total no. of inhabitants and its area), the national total in 2015 was 92.15 inhabitants per km², 0.3% lower than the previous year. Ceuta and Melilla, with 2,561.9 inhabitants per km², were the autonomous communities with the highest population density, followed by Madrid, the Basque Country and Catalonia, with a density of 801.9, 302.8 and 234.0 inhabitants per km² respectively. At the other end of the spectrum, the autonomous communities of Castilla-La Mancha, Castilla y León and Extremadura are the areas with the lowest population density with 25.9, 26.2 and 26.3 inhabitants per km² respectively.

If we calculate urban density as a way of measuring urban pressure in a certain territory by means of the relation between the urban areas with over 10,000 inhabitants and the area of that territorial division, we can observe that density figures decrease; therefore, at a national level, such density in 2015 amounted to 72.95 inhabitants per km^2, 0.3% lower than in 2014.

By autonomous community, the autonomous cities of Ceuta and Melilla had the highest urban density with 5,164.01 inhabitants per km^2, followed by Madrid with 755.3, the Canary Islands with 253.4 and the Basque Country with 243.2. At the other end of the spectrum, Extremadura, Castilla León and Castilla-La Mancha are the communities with the lowest urban density, with 12.7, 14.6 and 14,7 inhabitants per km^2 respectively.

As regards year-on-year variations, both Ceuta and Melilla and the Basque Country saw urban density increase on the previous year, by 0.22% and 0.56% respectively, as a consequence of the population increase in urban areas of over 10,000 inhabitants in 2015. On the other hand, the Canary Islands (-0.14%) and Madrid (-0.29%) reduced their urban pressure, although they are still in the top positions in the ranking. In the case of areas with the lowest urban density, we can observe that Extremadura, Castilla y León and Castilla-La Mancha decreased their urban density by 2%, 1.09% and 0.55% respectively.

If we take into account the last 16 years, 2000-2015, we can see that urban population density in Spain has risen by 19.84%. Within this general increase, Ceuta and Melilla stand out with an increase of 125.74%, Castilla La Mancha with 41.04%, the Balearic Islands with 40.37% and Murcia with 32.01%.

Definition of the Indicator:

This indicator represents population density data, both for Spain and by autonomous community, measured as the ratio between the population living in municipalities with over 10,000 inhabitants and the surface area of a particular territory. This ration may be referred to as "urban density" or "population density" and they are both used to assess urban pressure on the territory.

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 km2) that allows the level of concentration of population in the urban environment to be evaluated. For the calculation of this indicator, the figures supplied by the Municipal Register of Inhabitants as of 1 January of years 2014 and 15 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; there are other definitions to establish the difference between the urban and the rural environment (for example, the methodology applied for the definition of Spanish Urban Areas of the Statistical Atlas of Urban Areas of the Ministry of Public Works or the rural-urban geographical classification used by the Eurostat).

Source:

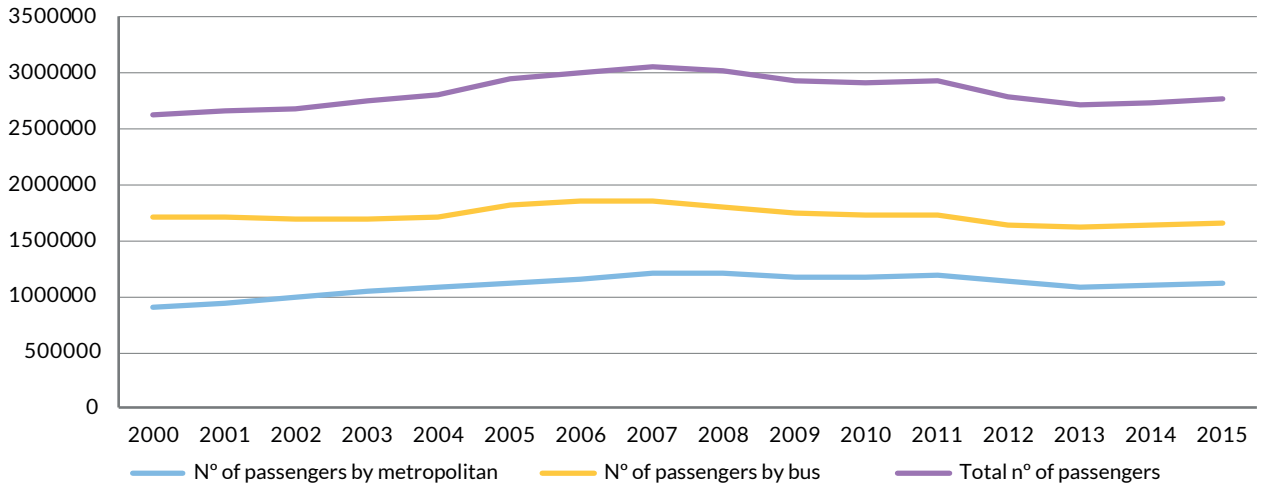
INE. Information on the website: INEbase / Demography and Population / Register. Population by municipalities / Population of municipalities and population / Official population figures for Spanish municipalities, review of municipal Register / Population at 01 January 2015.

Recommended Websites:

- http://www.fomento.gob.es/MFOM/LANG_CASTELLANO/_ESPECIALES/SIU/
- http://www.ine.es/inebmenu/mnu_padron.htm
- http://www.ine.es/inebmenu/mnu_entornofis.htm

Urban Public Transport

Urban public transport (thousands of passengers)



Source: INE

- ***In comparison to cars, metropolitan transport consumes half the amount of energy; in the case of buses, this proportion is four times less***
- ***In 2015, the number of passengers using urban public transport increased by 1.4%, reaching 2,771,057***
- ***Madrid was the autonomous community with the highest number of passengers using urban bus services in 2015, with 456,808,000 passengers***

According to the data by the Spanish National Institute of Statistics, the total number of passengers using public transport (city and inter-city transport) exceeded 4,516.8 million as a whole in 2015, an increase of 0.9% with respect to 2014.

Regarding urban public transport, in recent years efficiency in the use of resources has been prioritised while taking into account social demands and the increasingly stringent environmental quality requirements.

After several years in which investment and demand of public transport services dropped, clearly as a consequence of the economic crisis, we can observe a slight change in the trends, which seems to have been confirmed with the 2015 data. However, cars are still the most commonly used mode of transport in urban areas and the least efficient one, with an energy consumption that almost doubles that of the metro and is four times higher than that of the bus, which is the mode of transport requiring the lowest amount of energy for all phases.

In 2015 urban public transport increased by 39,505 passengers compared to the previous year, reaching 2,771,057,000, 1.4% higher. However, if we compare these figures with those of 2007, just before the onset of the economic crisis, the difference in the number of passengers is even higher: in the year 2015 there were 286,731,000 fewer passengers than in 2007, a decline of 9.38%.

Regarding urban transport, understood as urban bus and metropolitan rail services, metro numbers increased by 1.86% on 2014 with 1,120,243,000 passengers and bus numbers increased by 1.16% with 1,650,815,000. When evaluating the 2000-2015 series, we can observe that the number of passengers by metropolitan rail reached its maximum in 2008 with 1,218,009,000, 8.72% more than during 2015. The number of passengers peaked in 2007 with 1,850,195,000, 12.07% more than the number of passengers corresponding to the year under analysis.

As regards urban buses, and taking into account the relevant data on the autonomous communities, we can see that during 2015 the autonomous communities with the highest number of passengers were Madrid, 456,808,000, Catalonia, 270,324,000 and Andalusia with 219,982,000; on the other hand, Extremadura (10,674,000), Murcia (17,495,000) and Castilla-La Mancha (18,845) were the ones with the lowest number of passengers using urban buses.

If we look at a monthly comparison, we can observe that most autonomous communities follow the same pattern regarding the number of passengers: in the first five months of the year, numbers fluctuate up and down; during summer months (June, July, August) there is a major reduction, in most cases by over 30% (in some autonomous communities by even more, such as Murcia or Madrid, where it can decrease by up to 54.24% and 41.72%, respectively); in September and October, there are major increases, reaching maximum levels in all autonomous communities, with the exception of the Canary Islands where the peak is reached in November-; in the last two months of the year, November and December, there is another drop, lower in this case than for the summer months. Figures at year end are moderately higher than those in January. Asturias is the autonomous community whose figures deviate from the general trend, with increases during the months of June and July, together with C. Valencia, where the number of passengers also increases during the month of July.

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 or 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, as per the Spanish acronym) metropolitan areas match the geographic scope of action of each Public Transport Authority (ATP, as per the Spanish acronym).
- For the purposes of maintaining statistical confidentiality, data is not published for the autonomous communities of the Balearic Islands, Cantabria, Navarre and La Rioja and the Autonomous Cities of Ceuta and Melilla.

Source:

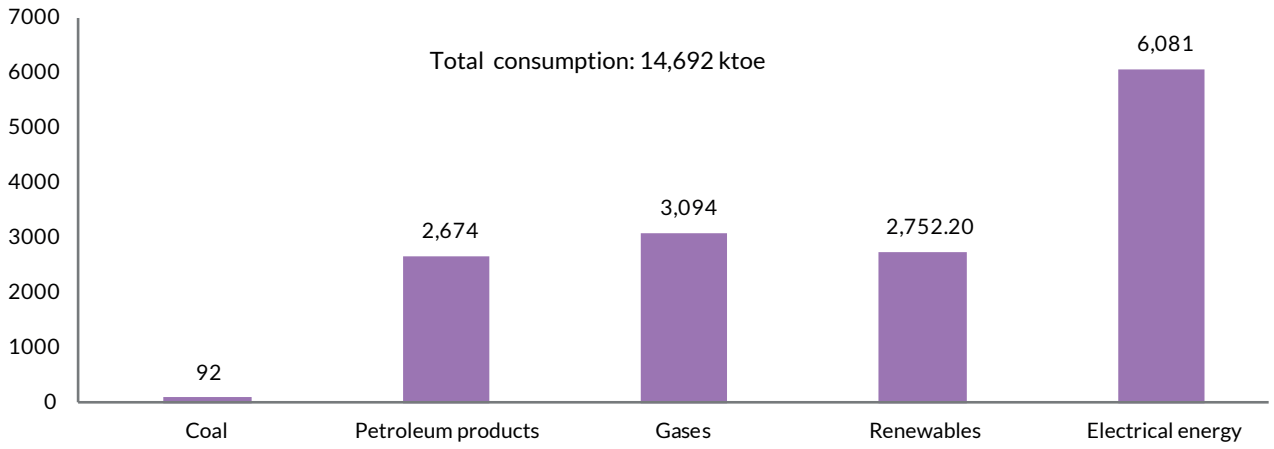
- INE. Information on the website: INEbase / Services / Transport and Related Activities, Communications / Passenger Transport Statistics. Short-Term Data / Monthly Series / Total Passengers and by Transport Mode.
- INE. Information on the website: INEbase / Services / Transport and Related Activities, Communications / Passenger Transport Statistics. Short-Term Data / Urban Bus Transport by Autonomous Community
- Ministry of Public Works. Information on the website: Home / Activity Areas / Land Transport

Recommended Websites:

- http://www.ine.es/inebmenu/mnu_transporte.htm
- http://www.observatoriomovilidad.es/
- http://www.transyt.upm.es/

Final Energy Consumption per Household

Final energy consumption per household in 2014 (ktoe)



Source: IDAE

- ***Total fuel consumption of Spanish households in 2014 was 14,692 ktoe, whereas consumption in the residential sector came up to 14,713 ktoe***
- ***The greater part of consumption by households corresponded to natural gas, representing 21.05% of the total***
- ***The country of the EU-28 whose residential sector showed the highest reduction of final energy consumption in 2014 was the United Kingdom, by 14.21%***

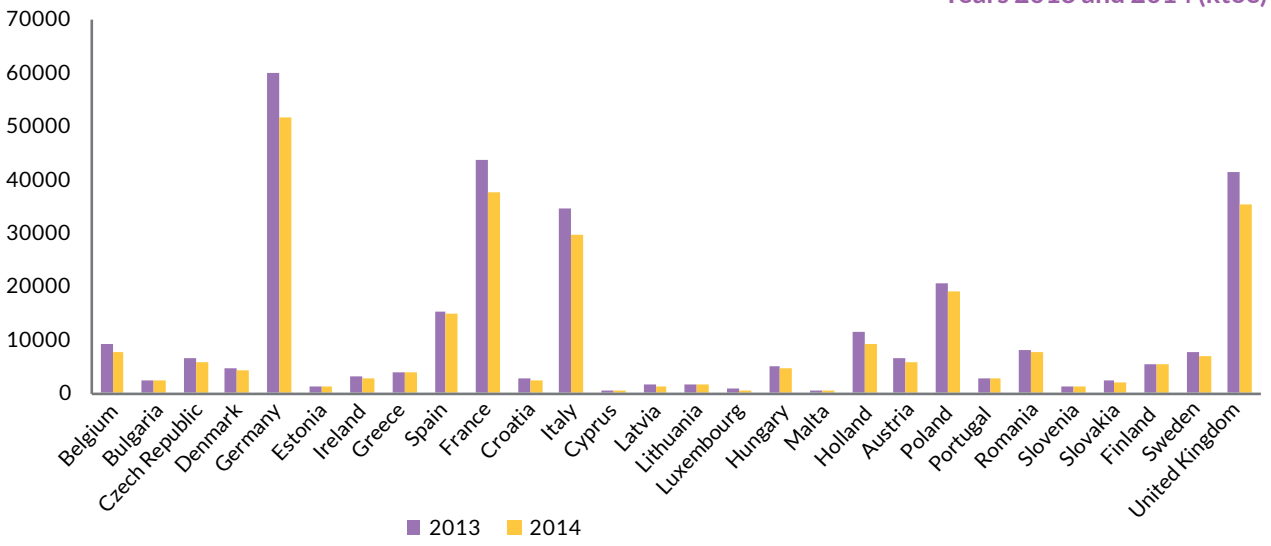
According to data from the Institute for Diversification and Energy Saving (IDAE, Spanish acronym), during 2014 final energy consumption in Spain, including non-energy uses, amounted to 83,525 kilotonnes of oil equivalent (ktoe), 2.7% lower than that of 2013; since both climate and labour conditions corresponding to those years were very similar, we can state that such a decrease was mainly due to the economic situation, as well as to the structure of energy-consuming sectors.

Regarding this final energy consumption, excluding non-energy uses, 14,692 ktoe (17.5%) correspond to total household consumption, a figure which grows to 14,713 ktoe when speaking about consumption of the residential sector, which included the energy consumption of second homes and, where applicable, common areas of residential buildings and communities.

By use type, out of the 14,692 ktoe of total household consumption, 8,612 ktoe (58.61%) correspond to thermal uses, whereas 6,081 ktoe (41.38%) correspond to electric uses. Regarding thermal uses, and in relation to the aforementioned total consumption, 0.62% correspond to carbon (92 ktoe), 18.20% to oil products (2,674 ktoe), which are in turn classified into liquefied petroleum gases or LPG (1,066 ktoe) and gasoil (1,608 ktoe), 21.05% to natural gas (3,094 ktoe) and 18.73% to renewable energies (2,752.20 ktoe), which are divided into biomass (2,537 ktoe), thermal-solar (203 ktoe), geothermal (10.65 ktoe) and bio-fuels (0.88 ktoe).

In the case of total residential consumption (14,713 ktoe), figures match those of household consumption, with the exception of petroleum products, which amount to a total of 2,695 ktoe, since fuel oil is included under liquid fuels, 21 ktoe of fuel oil is added to the 1,608 ktoe corresponding to gasoil.

Final Energy Consumption in the Residential Sector of the EU-28 Years 2013 and 2014 (ktoe)



Source: EUROSTAT

Within the scope of the UE-28, in 2014 the European residential sector consumed a total of 263,222.2 ktoe, of which 5.58% correspond to Spain, which remains the sixth highest energy consuming residential sector, behind Germany at 19.57% (51,527 ktoe), France with 14.19% (37,354.4 ktoe), the United Kingdom with 13.36% (35,174.8 ktoe), Italy with 11.22% (29,546 ktoe) and Poland with 7.19% (18,949.1 ktoe). At the other end of the spectrum, the countries with the lowest levels of residential energy consumption are: Malta, with 72.4 ktoe, 0.97% higher than last year's consumption, and Cyprus, with 289.7 ktoe, which keeps reducing its consumption, this year 3.78% lower than in 2013.

Regarding the 2013-2014 year-on-year variation, it must be highlighted that Germany and Italy reduced their consumption by 13.68% with respect to last year, much the same as France, with a reduction of 13.98% and the United Kingdom, by 14.21%. Consumption in Spain has decreased by 1.16% and therefore it is one of the countries with the lowest reductions in its residential sector.

Definition of the Indicator:

This indicator represents final energy consumption corresponding to the total consumed both by households and by the residential sector. European data correspond to the residential sector.

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 latter is for principal residences only.

Source:

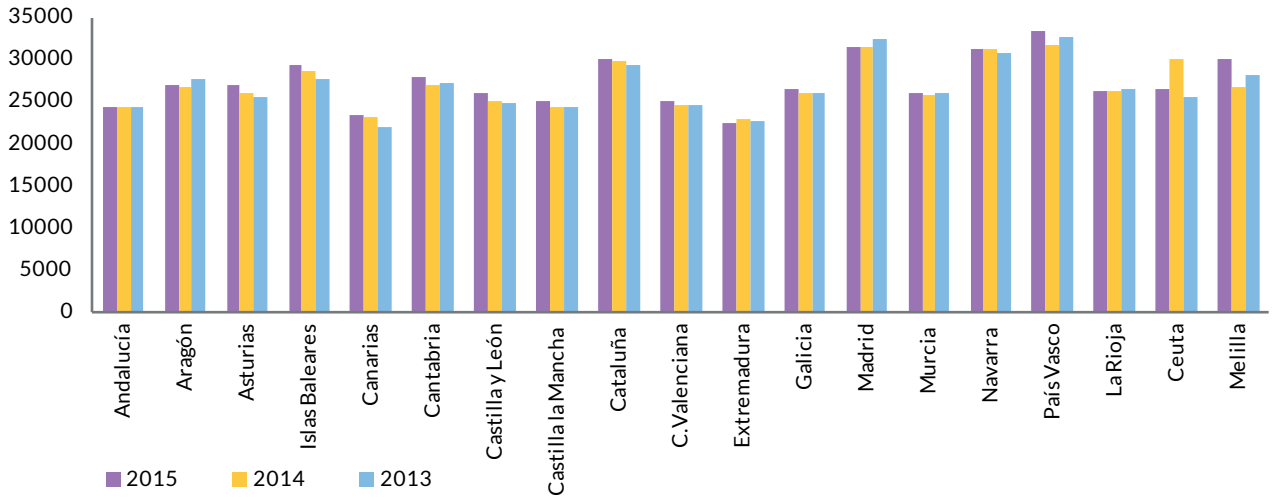
- IDAE / Home / Energy Saving and Efficiency / Studies, Reports and Statistics / Consumption Breakdown of the Residential Sector / Households (2014)
- EUROSTAT. Online enquiry: database / Environment and energy /Energy /Main tables /Energy Statistics-quantities/Final energy consumption by sector/Residential

Recommended Websites:

- http://www.idae.es/index.php/idpag.802/relcategoria.1368/relmenu.363/mod.pags/mem.detalle
- http://www.minetur.gob.es/energia/es-ES/Paginas/index.aspx
- http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database

Household Expenditure

Average expenditure per household and per AC (euros)



Source: INE

- *Total Spanish household expenditure in 2015 amounted to € 503,815,862, 1.8% higher than that of the previous year*
- *The autonomous community with the highest average household expenditure was the Basque Country, with € 33,318.44, 4.68% higher than in 2014*
- *The average household expenditure in Spain increased for the first time since 2008 by 1.41%. However, between 2010 until 2015 it fell by 6.84%*

According to data from the Spanish National Institute of Statistics (INE), the total expenditure of Spanish households in 2015 amounted to € 503,815,862, 1.80% more than the previous year. Taking into consideration the last five years, 2011-2015, we can observe that total expenditure fell by 3.36% from its peak in 2011, which amounted to € 521,361,589.96, followed by a two-year decrease in 2012 and 2013, leaving the figure at € 493,513,605.45 and then two years showing moderate increases in 2014 and 2015.

During the aforementioned five-year period, Spanish households spent a total of € 3,042,077,998.09.

By autonomous community, the highest expenditure during 2015 corresponds to households in Catalonia with € 89,005,650.78, 1.51% higher than in 2014, followed by Madrid, with a total expenditure 1.35% higher than during the previous year, at € 80,189,440.76. At the other end of the spectrum, Ceuta and Melilla were the autonomous communities with the lowest expenditure, with € 681,051.76 and € 737,360.24 respectively; as compared with the previous year, the total expenditure in Ceuta fell by 11.23%, whereas in Melilla the drop was 9.17%.

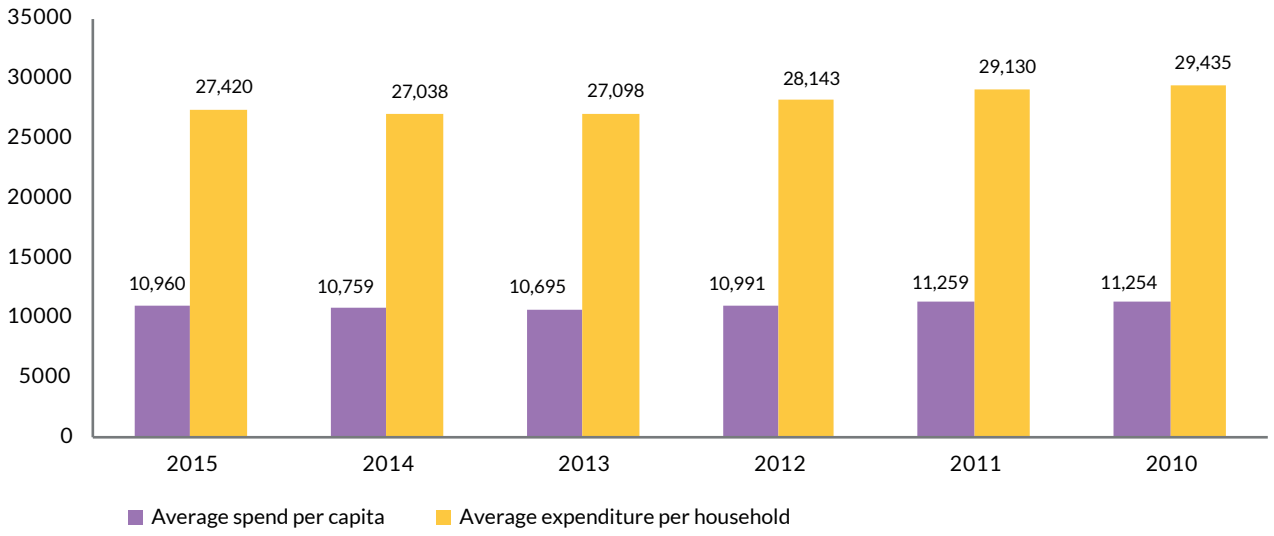
Regarding average household expenditure, the autonomous communities with the highest levels were: the Basque Country with € 33,318.44, 4.68% higher than in 2014, Madrid with € 31,532.12, 0.24% higher than in the previous year and Navarre with € 31,356.21, 0.04% higher than in the previous year. Taking into account the last six-year period 2010-2015, we can observe that the only autonomous community where average ex-

penditure did not decrease was Melilla, where it grew by 0.12%. All of the other autonomous communities saw average expenditure fall: Andalusia showed the highest decrease, 12.74%, followed by Ceuta, with 11.38%, Asturias with 10.68% and Madrid, with 10.03%. Taking into account the last three years only, 2013, 2014 and 2015, we can observe that virtually all autonomous communities have seen their average expenditure grow, the only exceptions being Madrid, with a decrease of 3.13%, Aragón, 2.08%, and La Rioja, 1.10%. The autonomous communities with the highest increase as regards their average expenditure during this three-year period were: the Balearic Islands, 6.28%, Melilla, 6.20%, and the Canary Islands, 5.90%.

The average expenditure per household at a national level in 2015 was 27,419.52 euros, increasing for the first time since 2008, with a difference of € 381.74 (1.41%) as compared to 2014. In constant terms, that is to say, after eliminating price effects, the average expenditure per household increased by 2.2%. Taking into consideration the six-year period 2010-2015, we can see that there has been a reduction of 6.84%. This type of expenditure increased significantly compared to 2014 in the following groups: hotels/restaurants (9.1%), furniture/household items (5.9%) and entertainment/culture (3.9%). On the other hand, the average expenditure per household decreased as regards transport (2.1%) and housing (0.4%).

Regarding the average expenditure per person, in current terms, such expenditure amounted to € 10,960.38 in 2015, 1.86% higher than that of the previous year; the variation in constant terms amounted to 2.7%. Taking into account the last six-year period, we can observe a reduction between 2010 and 2015 of 2.60%; expenditure per person amounted to € 11,253.88 in 2010, a figure that increased slightly in 2011 and then dropped year after year until 2015.

Average expenditure per household and per capita (€)



Source: INE

Definition of the Indicator:

This indicator represents the average expenditure per household, both national and regional (autonomous communities), as well as the average expenditure per person. Final expenditure for households include 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 expenditure: expenditure of the totality of all Spanish homes;
  - Average expenditure per household: obtained as a quotient of the total expenditure estimate by the number of households;
  - Average expenditure per capita: obtained as a quotient of the total expenditure estimate by 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).

Source:

- INE. INEbase / Standard and Life Conditions (IPC) / Living Conditions / Household Budget Survey. Base 2006 / National Results.
- INE. INEbase / Standard and Life Conditions (IPC) / Living Conditions / Household Budget Survey. Base 2006/Results by Autonomous Community

Recommended Websites:

- Statistics Website of the Regional Government of Catalonia.

  http://www.idescat.cat/pub/?id=aec&n=400&lang=es

2.18 NATURAL AND TECHNOLOGICAL DISASTERS

Economic development and related industrial activity may cause industrial accidents with social and environmental consequences, particularly when hazardous substances are involved in the processes. Besides, natural phenomena can cause serious damage to people and major material losses as well as human tragedies.

No. of disasters and fatalities due to natural disasters worldwide

	2015	2014	Annual average last 10-year period (2005-2014)	Annual average last 30-year period (1985-2014)
Events	1,060	980	870	710
Fatalities	23,000	7,700	97,750	56,100

Source: Prepared based on data from the Munich Reinsurance Company (several years): "2015 Natural Catastrophe Year in Review". On the website: www.munichre.com

Regarding natural disasters, 2015 was worse than 2014. There were 1,060 natural disasters around the world, in comparison to the 980 in 2014, and an average of 870 per year registered over the 10-year period 2005-2014 and an average of 710 corresponding over the last 30 years. As regards fatalities, in 2015 23,000 people died, three times the number of fatalities corresponding to 2014 (7,700); however, such a figure is much lower than that of the average for previous years (a fourth of the average for the 10-year period 2005-2014 and less than half the average for the previous thirty years). During the year, the disasters that caused the highest mortality rates were the earthquake in Nepal and neighbouring areas (9,000 fatalities), and the heat waves in India and Pakistan (3,700) and Europe (1,200 fatalities).

In 2015, the least frequent disasters were those that caused the highest numbers of victims: geophysical disasters (6% of events), caused 42% of fatalities, and climatological events (11%) caused 24% of fatalities. By geographic area, 39% of events took place in Asia, where 90% of the fatalities occurred (it is once again the continent with the highest number of victims).

Natural phenomena and industrial accidents taking place in Spain also have social and environmental consequences; however, such consequences are of a smaller magnitude than those occurring in other areas of the planet. The most relevant natural disasters in Spain are floods, storms and climatological events. The most significant industrial accidents are those corresponding to the industrial activities included within the scope of the "Seveso Directive" and the road transportation of hazardous goods.

In relation to shipping, in 2015 there were no maritime accidents which caused hydrocarbon spills from oil tankers, although there were operational discharges from ships and facilities (such as the accidental fuel spill from the container ship Nele Maersk during a standard fuel transfer operation between ships some 140 km from Barcelona and 100 km from the Balearic Islands, most of which occurred in port waters) and small pollutions from sunken ships. However, we must highlight the sinking of the fishing vessel "Oleg Naydenov" to the south of Gran Canaria, which led to fuel collection and final leak sealing activities between April and November 2015, in which 528 m^3 of fuel waste was cleaned.

Fatalities due to natural disasters

- Between 1995 and 2015 there were 1,215 fatalities due to natural disasters. Those with the highest mortality rate (% with respect to the total) were floods (27%), sea storms (21%) and storms and heat waves (around 15% each).
- In 2015, 36 people died due to natural disasters (seven more than last year), 16 as a result of floods and 10 as a result of heat strokes.

Drought periods

- Unlike the two previous years, 2015 was a very dry year in Spain
- Out of the last 75 years only eight showed an average rainfall below that of 2015

Forest fires

- In 2015, accidents and forest areas affected increased when compared with the previous year, but are lower than the average of the last 10-year period. Therefore, the positive overall trend continues.
- In 2015, 103,200 ha of forest area were affected, 33,495 ha of which were tree covered.
- In 2015, 15 major fires were registered, as compared to the average for the preceding ten-year period of 26.

Road and rail accidents causing environmental damage

- In the period 1997-2015, most accidents potentially causing environmental damage occurred by road (94.6%) and the other 5.4% by rail.
- The most relevant environmental impact is soil pollution. The total number of impacts potentially causing environmental damage does not match the total number of accidents, since the same accident may affect different environments.

Industrial accidents involving hazardous substances

- In Spain, the number of accidents under the SEVESO Directive, during its entire lifetime (1987-2015), amounted to 51.
- During the last 10-year period (2006 - 2015), a total of 26 accidents were recorded in Spain, with a maximum ratio of 7 accidents/year registered in 2010.
- In 2015, 3 accidents falling within the scope of the SEVESO III Directive were registered.

Extraordinary risks: compensation resulting from floods and storms

- In 2014, the Insurance Compensation Consortium processed 22,037 files corresponding to floods and 12,666 corresponding to storms.
- Resulting compensations amounted to 124.4 and 25.9 million euros respectively.

Fatalities due to Natural Disasters

Number of fatalities in Spain due to natural disasters. 1995-2015

Natural Disaster	1995-2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Floods	237	9	11	6	6	12	9	15	5	2	16	328
Storms	147	9	3	4	12	6	2	1	7	5	3	199
Forest fires	72	8	1	1	11	9	12	10	1	4	3	132
Landslides	21	5	2	1	2	2	3	0	2	0	1	39
Heat waves	95	23	9	3	6	16	6	6	4	0	10	178
Snow avalanches	28	0	0	4	3	11	2	0	4	0	1	53
Episodes of snow and cold	20	0	0	0	1	1	1	0	0	0	0	23
Deaths on land due to sea storms	202	n/d	2	5	2	5	2	7	9	18	2	254
Earthquakes	0	0	0	0	0	0	9	0	0	0	0	9
TOTAL YEAR	822	54	28	24	43	62	46	39	32	29	36	1,215

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

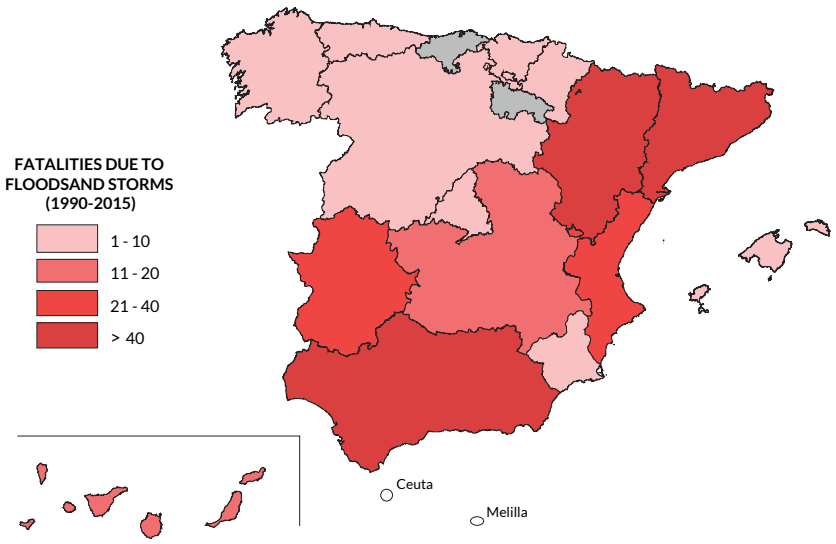
- ***Between 1995 and 2015 there were 1,215 fatalities due to natural disasters. Those with the highest mortality rate (% of the total) were floods (27%), sea storms (21%) and storms and heat waves (around 15% each)***
- ***In 2015, 36 people died due to natural disasters (seven more than last year), 16 as a result of floods and 10 as a result of heat strokes***

Disasters in Spain are less frequent than in other parts of the world. However, deaths do occur each year caused by such disasters. 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.

Disasters that caused the highest numbers of fatalities were floods (328 fatalities, 27.0% of the total), followed by fatalities on land due to sea storms (254 fatalities, 20.9% of the total) and fatalities related to storms, including lightning and strong winds (each around 15% of total fatalities). After that, fires were the accidents causing the highest number of fatalities with almost 11% of total victims, followed by fatalities due to snow avalanches, landslides, episodes of snow and cold -less than 5% of total fatalities-, and finally, earthquakes (with 9 fatalities registered during the Lorca earthquake of 2011).

In 2015, there were 36 fatalities due to natural disasters, seven more than the previous year. Of those fatalities, 16 were as a result of floods, 10 as a result of heat waves. There were no victims due to episodes of snow and cold or earthquakes.

Number of fatalities in Spain due to natural disasters. 1995-2015



Source: DGPCE. MI

Floods are the natural phenomenon that cause the highest number of fatalities in Spain. Within the 1990-2015 period, the total number of fatalities amounted to 362. By Autonomous Community, the highest number of fatalities correspond to Aragón and Andalusia, around 25% of the national total, followed by Catalonia (15%) and Extremadura and C. Valencia (8% of fatalities).

Out of the 16 fatalities in 2015 due to floods and freshets, 6 occurred in Andalusia, 5 in Catalonia, 3 in Navarre and 1 each in C. Valencia and Madrid.

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 that occurred in Spain.

Methodological Notes:

- Clarifications on certain natural disasters.
  - 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 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 and droughts since, although these phenomena may occur in our country, they have not caused any fatalities in the period under consideration, even though droughts are a recurring event. 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 Tenerife 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.
- Data adjustment.
  - There is no information on the fatalities on land due to sea storms for years 2005 and 2006.
  - 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.
  - 2015 data corresponding to fatalities caused by heat waves have not been verified with the General Subdirectorate for Environmental and Workplace Health (Ministry of Health, Social Services and Equality).
- 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:

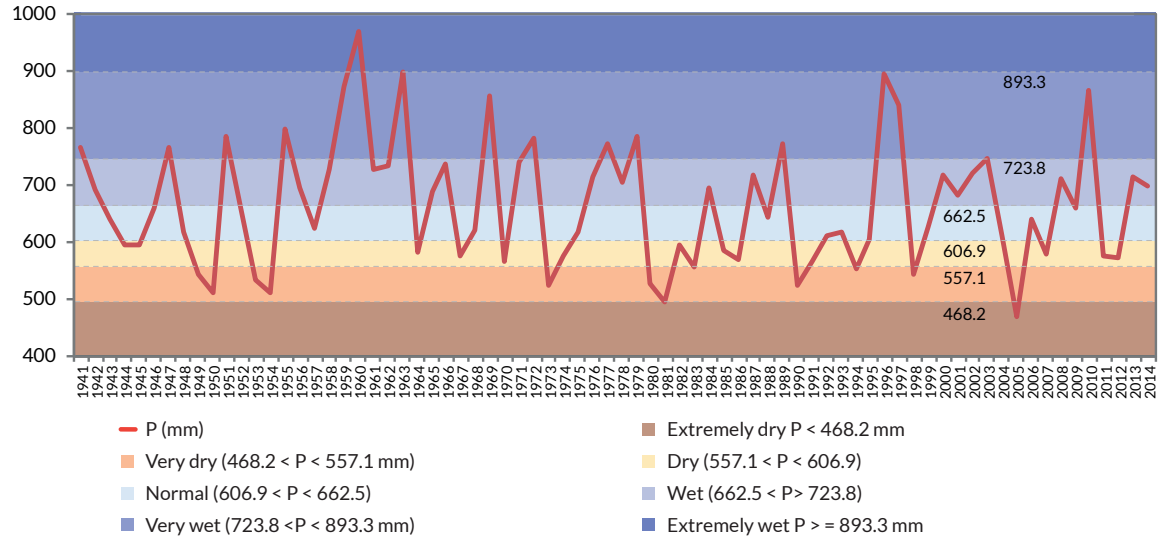
Sub-Directorate General for Planning, Operations and Emergencies. Directorate-General for Civil Protection and Emergencies. Ministry of Home Affairs

Recommended Websites:

- http://www.eea.europa.eu/highlights/natural-hazards-and-technological-accidents
- http://www.proteccioncivil.es/web/dgpcye/riesgos
- http://ec.europa.eu/research/environment/index_en.cfm?pg=hazards

Drought Periods

Average annual rainfall in Spain (mm)



Source: AEMET. MAGRAMA

- ***Unlike the two previous years, 2015 was a very dry year in Spain***
- ***Out of the last 75 years only eight showed average rainfall lower than that of 2015***

Average rainfall for period 1941-2015 is 665.2 mm. Outliers correspond to 2005, with 468.2 mm and 2014, with 969.3 mm. Out of the last 75 only eight showed average rainfall lower than those of 2015.

Unlike 2013 and 2014, which were very wet years, 2015 was a very dry year in Spain. Particularly noteworthy is the rainfall deficit during the second half of the spring and during the months of November and December. In general, rainfall was heavy during March (mainly in the second half of the month and particularly in the East of the peninsula), but decreased leading to a May which was the driest month since 1947. Rainfall levels during the summer, however, were slightly higher than average, with storms in the east and interior areas of the north of the peninsula. Autumn was relatively dry, mainly due to the low rainfall levels in November. December was also a very dry month, with an average rainfall of just 17 mm.

The analysis of the average annual rainfall since 1941, defined each year according to ranges based on the percentiles corresponding to the reference period 1981-2010, is what is shown in the chart. According to the chart, 17.3% of the year can be classified as average, whereas 46.7% was wet or very wet and only the remaining 36% was classified as dry or very dry.

Percentage of years classified according to their average rainfall (1941-2015)

Extremely dry R<468.2	Very Dry 468.2<R<557.1	Dry 557.1<R<606.9	Average 606.9<R<662.5	Wet 662.5<R<723.8	Very wet 723.8<R<893.3	Extremely wet R>893
1.3	16.0	18.7	17.3	16.0	28.0	2.7

Source: Data compiled from AEMET

Regarding temperatures, the "Climate Report 2015" by the Spanish State Meteorological Agency classified the year 2015 as extremely hot in Spain, with an average temperature of 16ºC. Together with 2011, it is the hottest year since 1981.

Definition of the Indicator:

The indicator compares the average annual rainfall for the period 1941-2015 with the average situation established for a 30-year reference period (1981-2010) which gives rise to a general classification ranging from different levels of drought-humidity based on rainfall levels.

Methodological Notes:

For AEMET, the 1981-2010 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 (< 468.2): rainfall is lower than the minimum value of the series.
- Very dry (>=468.2 and < 557.1): rainfall is equal to or higher than the minimum value registered in the reference period and lower than 20th percentile of the series.
- Dry (>=557.1 and < 606.9): rainfall is equal to or higher than 20th percentile and lower than 40th percentile.
- Average (>=606.9 and < 662.5): rainfall is equal to or higher than 40th percentile and lower than 60th percentile.
- Wet (>=662.5 and < 723.8): rainfall is equal to or higher than 60th percentile and lower than 80th percentile (664 mm < r ≤ 747 mm).
- Very wet (>=723.8 and < 893.3): rainfall is equal to or higher than 80th percentile and lower than the maximum value of the series.
- Extremely wet (>=893.3): rainfall is equal to or greater than the maximum amount recorded in the reference period.

Scarcity of precipitation (meteorological drought) may cause a shortage of the 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 every water user even 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, as per the Spanish acronym). MAGRAMA

Recommended Websites:

- www.aemet.es

Forest fires

Forest area affected by fire and number of events, 1996-2015

Source: MAGRAMA

- ***In 2015, accidents and forest areas affected increased when compared with the previous year, but are lower than the average of the last 10-year period. Therefore, the positive overall trend continues***
- ***In 2015, 103,200 ha of forest area were affected, 33,495 ha of which were tree covered***
- ***In 2015, 15 major fires were registered, as compared to the average for the preceding ten-year period of 26***

In 2015 (provisional data), 11,928 events occurred, out of which 7,755 were incipient fires (<1 ha) and 4,173 turned into fires (>1 ha). This means that there was an increase in comparison to the previous year both in regard to accidents and affected areas. The total forest area affected and the number of large fires doubled.

However, within the scope of the previous 10-year period (2005-2014) and considering the cyclic trend of the phenomenon's behaviour, the evolution is a positive one.

In 2015, in comparison to the average of the preceding 10-year period, affected areas decreased by 5%, accidents decreased by 17% and large fires decreased almost twice as much, 42%, which shows the development of prevention actions against forest accidents.

In the case of large forest fires (LFF, those with an area ≥500 forest ha), in 2015 there were 15 fires which covered 38.8% of the total affected area; they took place in July, but for three that occurred in August, one in December and another one in May. The largest fires were those in Quesada (Jaén) with 9,060.7 ha, Luna (Zaragoza), 8,400.0 ha and Acebo (Cáceres) with 6,832.0 ha. The most affected region was the area within the interior regions, where 33% of large fires took place, affecting 44% of the total area affected by fire.

Forest fires for the ten-year period 2005-2014 and year 2015

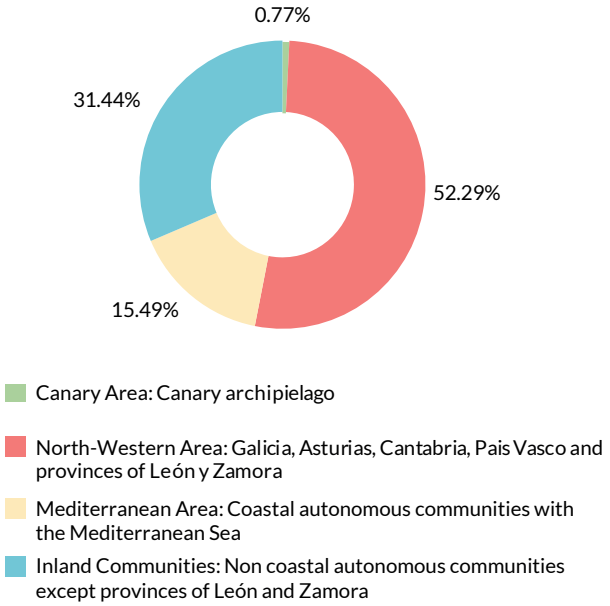
	Average 10-Year Period 2005-2014	2015
No. of incipient fires (<1 ha)	9,539	7,755
No. of fires (<1 ha)	4,950	4,173
Total number of fire incidents	14,489	11,928
Wooded area (ha)	35,615.47	33,494.55
Forest area (ha)	108,493.59	103,199.96
Affected area (%) / National forest area (%)	0.394	0.374
No. of Large Forest Fires	26	15

Source: MAGRAMA

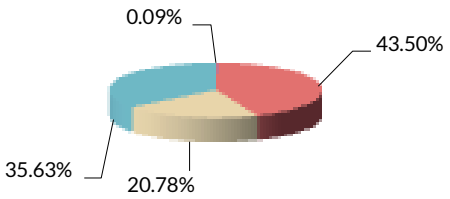
Looking at the the territorial distribution of accidents registered in 2015, the highest percentage corresponds to the North-Western Area, followed by the Inland Communities and those corresponding to the Mediterranean Area and the Canary Islands, with low figures in comparison to the national average.

Forest fires and affected areas in 2015

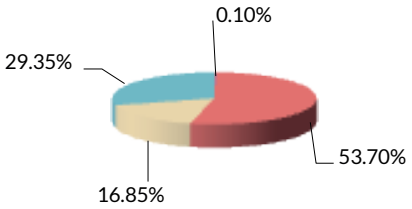
No. of Forest fires



Area Tree-covered area affected



Total forest area affected



Regarding the number of accidents, out of the total, 52.3% corresponds to the Northwest Area, 31.4% to Inland Communities and 15.5% to the Mediterranean Area. Regarding the area affected, out of the total affected forest area, 53.7% corresponds to the Northwest Area, 29.4% to Inland Communities and 16.9% to the Mediterranean Area; as regards wooded area affected, 43.5% corresponds to the Northwest Area, 35.6% to Inland Communities and 20.8% to the Mediterranean Area (which means that in the Northwest Area, the effect on wooded areas is lower than in the rest of Spain).

Definition of the Indicator:

The indicator counts the number of forest accidents occurring during the relevant year (period between 1 January to 31 December). The number of events include those fires affecting a surface area of over 1 ha and incipient fires which are fires affecting a surface area under or equal to 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 includes 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:

"Forest Fires in Spain, 1 January - 31 December 2015. Information Preview". (February 2016) Forest Fire Defence Department. Directorate-General for Rural Development and Forest Policy. Ministry of Agriculture, Food and the Environment.

Recommended Websites:

- http://www.magrama.gob.es/es/desarrollo-rural/estadisticas/Incendios_default.aspx

Road and rail accidents potentially causing environmental damage

Number of accidents with possible environmental damage produced by the transport of dangerous goods by road and rail

	1995-2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Road	437	46	48	45	47	25	26	21	28	10	20	753
Rail	36	1	2	1	0	0	0	0	0	3	0	43
TOTAL	473	47	50	46	47	25	26	21	28	13	20	796

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

- ***In the period 1997-2015, most accidents potentially causing environmental damage occurred by road (94.6%) and the other 5.4% by rail***
- ***The most relevant environmental impact is soil pollution The total number of impacts potentially causing environmental damage does not match the total number of accidents, since the same accident may affect different environments***

The most serious accidents in the transport of goods in which dangerous substances are involved usually result in 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.

In the period 1997-2015, during the transport of hazardous goods, 796 accidents potentially causing environmental damage were registered, with certain variability across the years due to several factors.

Most of these accidents correspond to road accidents, 753 accidents (94.6%) in comparison to 43 rail accidents (5.4% of the total). The lower recurrence of accidents in the transport of goods by rail (the annual maximum was 10 accidents in 1997) is mainly due to the safety of this means of transport and also to the lower demand: in 2014, 79.8% of inter-city goods transport was by road, whereas only 3.4% of goods were transported by rail (referring to the total transport of goods, not only hazardous goods).

In 2015, 20 accidents with potential environmental damage related to the road transport of goods were registered.

Regarding the number of impacts potentially causing environmental damage in the transport of hazardous goods (when the existence of a leak or spillage, on land, in water or into the atmosphere is reported) for the period 1997-2015, it is important to know the distribution of risks affecting the different resources. During such period, potential impacts to soil amounted to 688, whereas impacts to water totaled 119; impacts to the atmosphere show a similar but lower figure of 102.

In the publication of the Directorate-General for Civil Protection and Emergencies, called "Emergencies corresponding to the transportation of hazardous goods by road and rail. Triennial Report 2011-2013" the period 2011-2013 is analysed. The report states that spills usually affect soils (27.6% of accidents), followed by emissions to the atmosphere (5.7%) and, finally, into water courses (5.1%); a stable trend during the entire period under analysis.

Number of impacts causing possible environmental damage through the transport of hazardous goods, 1997-2015

	1995-2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Air pollution	50	7	8	4	5	7	7	5	4	1	4	102
Water pollution	70	8	7	8	2	4	7	5	2	2	4	119
Soil pollution	413	41	43	39	44	18	21	18	23	10	18	688
TOTAL	533	56	58	51	51	29	35	28	29	13	26	796

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

Definition of the Indicator:

The indicator studies the evolution of the number of transport (road and rail transport) accidents causing potential environmental damage.

Methodological Notes:

- 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.
- 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:

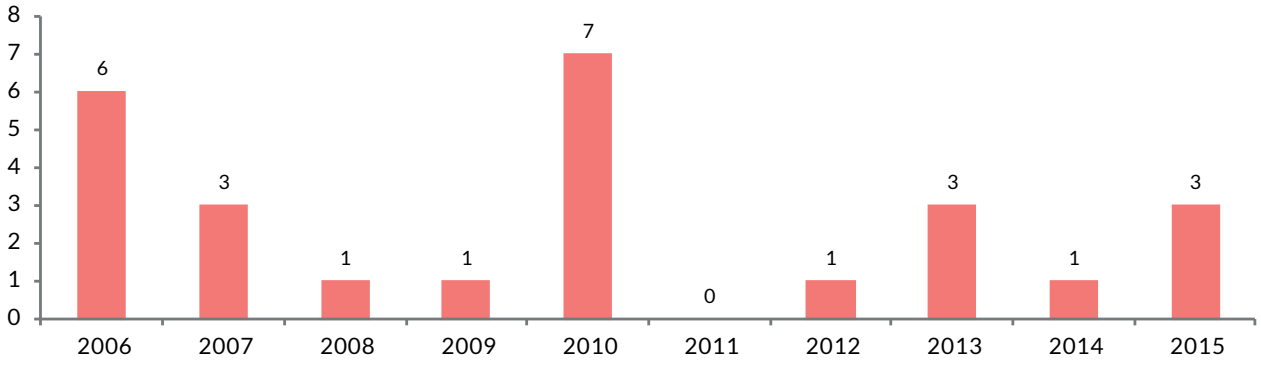
Data provided by the Directorate-General for Civil Protection and Emergencies. Ministry of Home Affairs.

Recommended Websites:

- http://www.proteccioncivil.es/web/dgpcye/riesgos
- http://www.proteccioncivil.org/catalogo/carpeta02/carpeta21/trienal2011-2013/1.html
- http://www.eea.europa.eu/highlights/natural-hazards-and-technological-accidents
- http://ec.europa.eu/research/environment/index_en.cfm?pg=hazards

Industrial accidents involving hazardous substances

Evolution of the number of industrial accidents within the scope of the SEVESO Directive



Source: DGPCE. MI

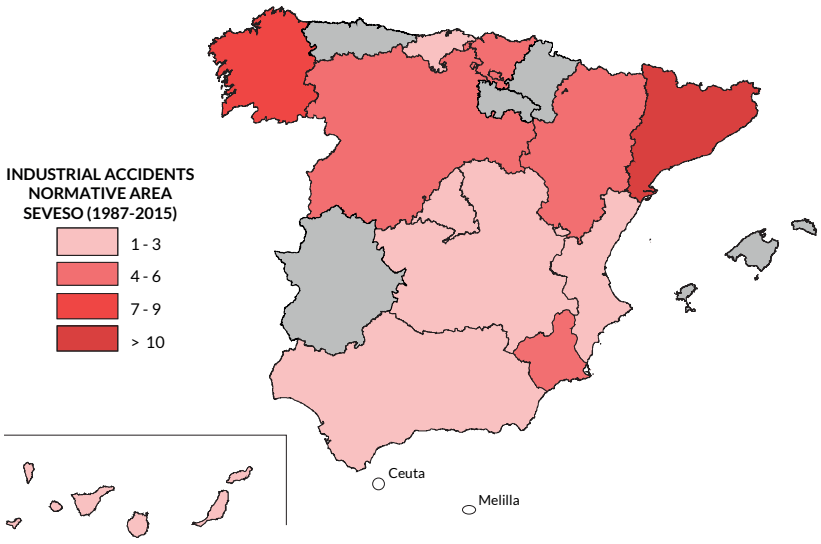
- ***In Spain, the number of accidents under the SEVESO Directive, during its entire lifetime (1987-2015), amounted to 51***
- ***During the last 10-year period (2006 - 2015), a total of 26 accidents were recorded in Spain, with a maximum ratio of 7 accidents/year registered in 2010***
- ***In 2015, 3 accidents falling within the scope of the SEVESO III Directive were registered***

In 2015, Royal Decree 840/2015, of 21 September, approving control measures of major-accident hazards involving dangerous substances was passed repealing Royal Decree 1254/1999, of 16 July, the regulation governing such a matter until then.

This regulation is known as SEVESO III and it transposes Directive 2012/18/EU of the European Parliament and of the Council, of 4 July 2012, on the control of major-accident hazards involving dangerous substances.

In Spain, for the whole period in which the SEVESO Directive was in force (1987-2015), a total number of 51 industrial accidents falling within the scope of the SEVESO III Directive occurred. Most of the events registered correspond to those autonomous communities with a significant density of industrial fabric affected by these regulations, as well as in petrochemical and refining industries and in industries for the manufacturing of chemicals. No accident has been recorded in the autonomous communities of Asturias, Balearic Islands, Extremadura, La Rioja and Navarre; Catalonia had the highest number of accidents, 17 (33.3% of the total), twice as many as the following Autonomous Community, Galicia, with eight accidents (15.7% of the total); the other Autnomous Communities had a maximum of five accidents.

Industrial accidents within the scope of SEVESO Directive (1987-2015)



Source: DGPCE. MI

Over the last 10 years (between 2006 and 2015), a total of 26 accidents were recorded, with an annual maximum of seven accidents registered in 2010.

In 2015, three accidents in industrial facilities falling within the scope of the SEVESO III Directive were registered in the autonomous communities of Aragón, Catalonia and Galicia.

Definition of the Indicator:

The indicator shows the evolution in the number of industrial accidents involving activities included within the scope of the SEVESO Directive.

Methodological Notes:

- The so-called SEVESO Directive, is developed by virtue of a number of European directives repealing and replacing the previous one.

  SEVESO I. 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.

  SEVESO II. Directive 96/82/CE on the control of major-accident hazards involving dangerous substances is intended to prevent accidents of this kind and reduce their consequences for human health and safety and the environment. Its main amendments consisted 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.

  SEVESO III. Directive 2012/18/EU, on the control of major-accident hazards involving dangerous substances, was transposed to the Spanish legal system on the 1 June 2015. Its main amendments 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. In addition, new inspection programmes are established (it is compulsory to conduct annual on-site inspections to those establishments with higher risks of accidents 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.

- 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:

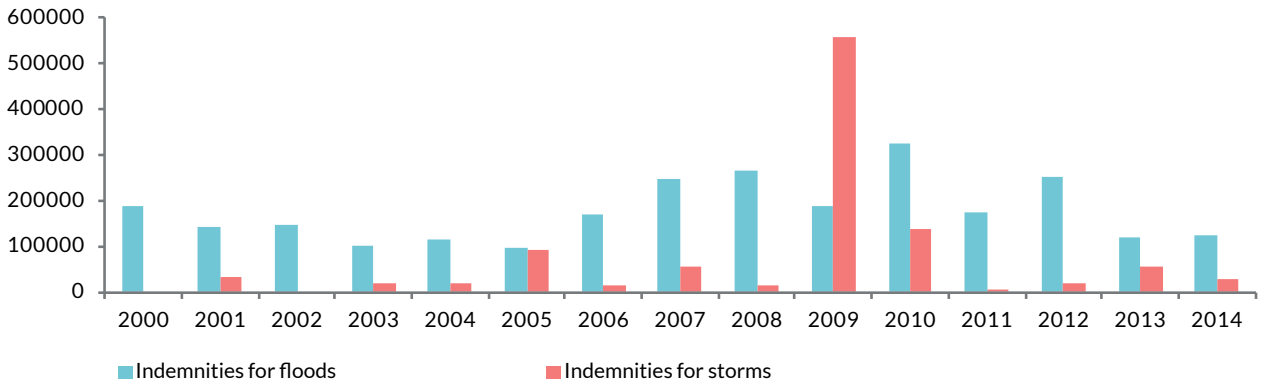
Data provided by the Sub-Directorate-General for Planning, Operations and Emergencies. Directorate-General for Civil Protection and Emergencies. Ministry of Home Affairs

Recommended Websites:

- http://www.proteccioncivil.es/web/dgpcye/riesgos

Extraordinary risks: compensations resulting from from floods and storms

Evolution of compensation payments resulting from floods and storms (thousands of euros). 2000-2014 Series



Source: Insurance Compensation Consortium

- ***In 2014, the Insurance Compensation Consortium processed 22,037 files corresponding to floods and 12,666 corresponding to storms***
- ***Resulting compensations amounted to 124.4 and 25.9 million euros respectively***

Natural disasters have less of an impact in Spain than in other parts of the world but every year extraordinary phenomena strike causing damage. Floods and storms are usually the most common.

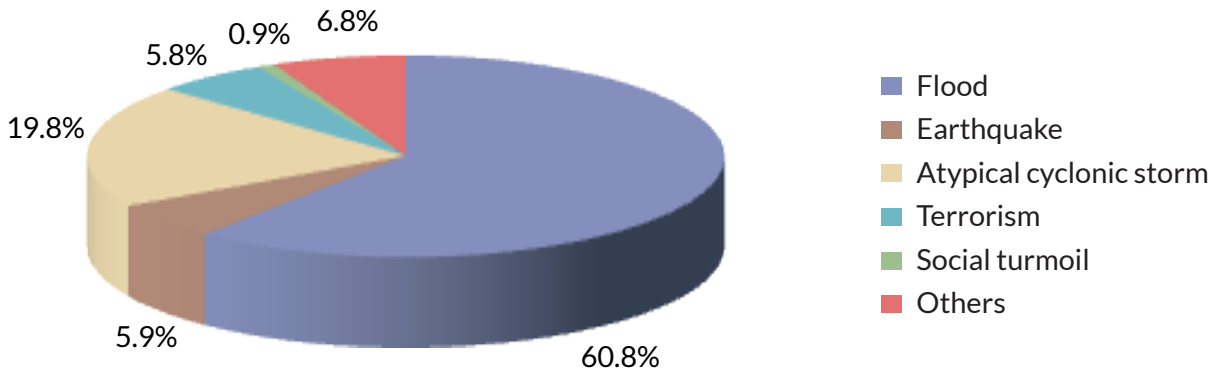
Flooding is defined as the waterlogging of soil caused by rain or melting ice, by water from lakes with natural outlets, of rivers and natural surface water courses when their usual courses are overflown; it also includes the incursion of the sea on the coast, even if there is no waterlogging. The atypical cyclonic storm includes, among others, tornadoes and extraordinary winds (gusts over 120 km/h).

For the assessing of their incidence, we use compensation data from the "Statistics on Extraordinary Risks" by the Insurance Compensation Consortium.

Between 1971 and 2014 floods and storms led to 80.6% of compensations. Floods accounted for 60.8% of compensations, making it the highest economic risk factor during the period and, in particular, every year since 2000 but for 2009. Storms led to 19.8% of compensations and have a much more irregular nature than floods; storm "Klaus" provoked exceptionally high damages in 2009, amounting to 514.1 million euros in compensations.

The year 2014 was similar to the preceding one. Floods accounted for 22,037 claims, amounting to 124.4 million euros; floods and the incursion of the sea on the coast in January and February in the north of the peninsula were the most significant events. On the other hand, storms accounted for 12,666 claims, amounting to 25.9 million euros.

Distribution of compensation payments by cause. 1971-2014 Series



Source: Insurance Compensation Consortium

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. It aims to compensate for the damages caused to people and goods by certain natural phenomena and certain events arising from political or social occurrences.

Those events included in the coverage of “extraordinary risks” are phenomena characterized by an absolute lack of regularity in terms of their occurrence (both in relation to frequency and intensity) and, therefore, since their consequences are significantly variable, with a high probability of accumulation both in relation to time and location.

It must be taken into account that direct damages caused by rain, hail and snow covered by the Consortium until 1987 (which are limited now to those caused by the flood) are included in cause "atypical cyclonic storm". Cause "others" used in the chart distribution of compensations include "fall of astral bodies and meteorites", "riot", "actions by the Armed Forces" and "miscellanea"; the latter is the only one showing significant figures.

Source:

Statistics on Extraordinary Risks. 1971-2014 series. Insurance Compensation Consortium. Ministry of Economy and Competitiveness

Recommended Websites:

- http://www.consorseguros.es/web/es_ES/inicio
- http://www.consorseguros.es/web/es_ES/la-entidad/publicaciones

Information by Autonomous Community: Basic Data

3 INFORMATION BY AUTONOMOUS COMMUNITY: BASIC DATA

One of the main goals of the Environmental Profile of Spain is to offer information on the Autonomous Communities (also kown as Autonomous Regions). Therefore, a specific chapter complementing the references made to them in the different indicators is included.

Every year the contents of the report are reviewed and as a result of these reviews the contents of this chapter have been amended since they were included for the first time in the "Environmental Profile of Spain 2007".

For this new issue, the National Focal Point of the Spanish EIONET Network, also proposed an in-depth review, requesting from members of the network (National Reference Centres and Regional Focal Points) their opinion on the need to amend, detail or broaden the contents of the report, particularly regarding the section on autonomous communities.

The different proposals received were adapted to the descriptive data sheet format used in previous years, broadening the contents corresponding to the previous year with the introduction of the new variables proposed. The data sheet format is used due to the fact that this is a general report with a limited length.

The final content of this chapter is divided into the following three sections:

- Geographic and Administrative Information
- Socio-Economic Information
- Environmental information regarding: land, nature, waste, water, air quality, electric energy consumption and business response and social participation
- Environmental reports of the Autonomous Community
- Links to the Autonomous Community's environmental websites of interest
- Other data or relevant information

The first two blocks of information show data taken from the Spanish National Institute of Statistics (INE); references to the Spanish average are made in order to assess the situation of the relevant autonomous community with regards to such average. The section on environmental information includes mainly data collected from the relevant autonomous community, with the exception of the information on water consumption (the source of which is the INE), forest fires (source: the autonomous community and MAGRAMA), air quality (source: MAGRAMA, from data provided by the autonomous communities and used for the assessment of air quality) and the electric energy demand (source: Red Eléctrica de Spain - Spanish Electric Network).

In the case of the information issued by the autonomous community, when the source has been specified in detail, it has been included in each data sheet. When the source has not been mentioned, the following reference has been included: "data provided by the Regional Focal Point (RFP)".

In general terms, data provided refer to the year set out in the heading of the variable or, when several years are included, in the corresponding row. However, in those cases in which the piece of information corresponds to a previous year, such year is included in brackets after the figure. This circumstance has arisen on several occasions in the waste section.

Those variables for which information is sourced from the autonomous community must not, under any circumstances, be compared with those of other autonomous communities or with the Spanish average since there may be differences in the methods used for the estimate and calculation of such information and therefore calculations may differ, even though they refer to the same variable or have the same name.

Finally, as in the case of previous years, the final sections include references to the environmental reports prepared by the autonomous communities as well as any relevant websites and any other information on the environmental goals and initiatives the autonomous communities decided to emphasise.

Complete references to the source are included at the end of this chapter; they specify in detail the source of the information and the access route of the relevant website.

Finally, we must mention the role of Regional Focal Points of the Spanish EIONET Network in the preparation of this chapter. They contributed in the definition of the variables, as well as in the calculation of the information requested. Thanks to their involvement and commitment, we were able to prepare the following contents.

ANDALUSIA

GEOGRAPHIC AND ADMINISTRATIVE INFORMATION

Statute of Autonomy: Organic Law 2/2007, of 19 March
Area (INE): 87,599 km²
Average coastline length: 2,138.4 km (20.8% of the Spanish total)
Capital: Seville **Provinces:** 8 **Municipalities:** 771
Population (2015): 8,399,043 inhab.
Population density (2015): 95.9 inhab./km²
Change in No. of inhabitants (%) 2000-2015: 14.4 **/ 2014-2015:** 0.0

SOCIO-ECONOMIC INFORMATION

EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Andalusia	7.9	8.3	5.4	78.4
Spain	4.1	13.9	6.0	76.0

GVA SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Andalusia	4.8	11.2	5.5	69.2
Spain	2.3	15.5	5.0	68.0

UNEMPLOYMENT RATE						
2007	2010	2011	2012	2013	2014	2015
12.8	27.8	30.1	34.4	36.2	34.8	31.5
Average in Spain in 2015: 22.1						

GROSS DISPOSABLE HOUSEHOLD INCOME (2013)			
SCOPE	€/inhab.	Spain=100	2012-2013 Change (%)
Andalusia	11,075	78.8	-0.5
Spain	14,059	100.0	-0.5

Source: INE (for all variables). Note: percentages may not add up to 100 per cent due to being rounded to one decimal place

ENVIRONMENTAL INFORMATION

LAND

LAND DISTRIBUTION IN % (2013)					
Scope	Water	Artificial	Agriculture	Forests and semi-wild areas	Wetlands
Andalusia	1.2	2.6	45.2	50.3	0.7
Spain	0.8	2.5	41.9	54.6	0.2
Source: MAGRAMA					

No. OF POLLUTED SITES UP TO 2015		
Scope	Declared	Decontaminated/ Recovered
Andalusia	27	16
Source: Regional Ministry of Environment and Land Planning. Regional Government of Andalusia (Data from 2005 to 2015)		

NATURE

PROTECTED NATURAL AREAS (2015)		
Protected Natural Areas		
Number	Surface area (ha)	Visits
165	1,968,581.6	-
Including land and marine areas Source: Regional Ministry of Environment and Land Planning. Regional Government of Andalusia		

WILDLIFE: SPECIES INCLUDED IN THE CATALOGUE AND EXOTIC INVASIVE SPECIES (2015)			
No. of species included in the Regional Catalogue of Threatened Species		Spanish Catalogue of Exotic Invasive Species. No. of species included in the Catalogue of TS	
Fauna	Flora	Fauna	Flora
439	295	38	34
Source: Regional Ministry of Environment and Land Planning. Regional Government of Andalusia			

FOREST FIRES							
Year / Period	No. of events		Forest area (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous*
	Incipient fires (<1ha)	Fires (>1ha)		Wooded area	Scrubland and pastures	Total woody area	Total herbaceous area
2015	656	167	12,650.2	4,514.4	8,135.9	12,650.2	0.0
*No data on herbaceous area Source: MAGRAMA							

WASTE

WASTE PER INHABITANT (kg/inhab.)					
Year	Household / municipal waste	Hazardous waste	Selective collection of paper / cardboard	Selective collection of glass	Selective collection of packaging
2010	577.7	32.4	13.8	9.8	11.0
2015	504.0 (Year 2014)	31.9 (Year 2014)	10.2 (Year 2014)	10.0 (Year 2014)	9.8 (Year 2014)

Source: Regional Ministry of Environment and Land Planning. Regional Government of Andalusia

WATER

AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day)							
Scope	2005	2010	2011	2012	2013	2005-2013 Change (%)	2012-2013 Change (%)
Andalusia	196	142	139	127	120	-38.8	-5.5
Spain	168	142	140	135	130	-22.6	-3.7

Source: INE

AIR

AIR QUALITY IN RELATION TO THE PROTECTION OF HUMAN HEALTH					
NO_2: average annual concentration in urban areas (µg/m³). Year 2014					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
49.4	41.6	3.9	3.9	1.3	77
PM10: average annual concentration in urban areas (µg/m³). Year 2014					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
1.6	31.1	52.5	14.8	0.0	61
PM2,5: average annual concentration in urban areas (µg/m³). Year 2014					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2014
0.0	62.5	20.8	16.7	0.0	24
O_3: maximum daily levels of eight-hour running average (µg/m³). Year 2014					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2014
8.9	67.9	23.2			56

Note: LET= Lower Evaluation Threshold; UET= Upper Evaluation Threshold; ALV= Annual Limit Value; LTT= Long Term Target; TV= Target Value.
Source: MAGRAMA

ENERGY

ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab,)							
Scope	2010	2011	2012	2013	2014	2015	2010-2015 Change (%)
Andalusia	4.843	4.745	4.699	4.524	4.468	4.629	-4.4
Spain	5.863	5.735	5.652	5.540	5.519	5.639	-3.8

Source: data compiled by the authors from the REE and INE data

BUSINESS RESPONSE AND SOCIAL PARTICIPATION

GREEN ECONOMY		
Green Jobs		Organic Labelling
Year	No. of Jobs	No. of labelled products in 2015
2012	89,747	2

Source: Regional Ministry of Environment and Land Planning. Regional Government of Andalusia

CITIZENS ADVICE BUREAU: RESPONSE TO INFORMATION REQUESTS			
Requests for information in 2015			
Total number	Answered within a term of < 1 month	Answered within a term of > 1 month	Unanswered
45,629	45,244	385	0

Source: Regional Ministry of Environment and Land Planning. Regional Government of Andalusia

ENVIRONMENTAL REPORTS

- Environmental Report of Andalusia (IMA, Spanish acronym), 2014: http://www.juntadeandalucia.es/medioambiente/site/ima
- Basic Environmental Data of Andalusia, 2014: http://www.juntadeandalucia.es/medioambiente/andaluciadatosbasicos

LINKS TO THE AUTONOMOUS COMMUNITY'S ENVIRONMENTAL WEBSITES OF INTEREST

- Website REDIAM: http://www.juntadeandalucia.es/medioambiente/site/web/rediam
- IMA Channel: www.juntadeandalucia.es/medioambiente/rediam/IMA
- Statistics Viewer: www.juntadeandalucia.es/medioambiente/rediam/estadisticas_IMA
- Environmental Indicators of Andalusia: www.juntadeandalucia.es/medioambiente/rediam/indicadores_ambientales

RELEVANT DATA OR INFORMATION

- The European Commission has approved, within the framework of the 2014 call of the European LIFE Programme for the Environment and Climate Action, two projects prepared by the Regional Government of the Environment and Land Planning called "Adaptamed" and "Blue Natura" aimed at minimising the effects of climate change in the area by increasing the resilience of key eco-systems while reducing greenhouse gases. Both plans will involve a total investment of 8 million Euros.
- From the 1st January 2015, the European KINDRA Project (Knowledge Inventory for Hydrogeology Research) is in place for the creation of a research inventory applied to hydrogeological knowledge with a budget of 1,1 million Euros in which the Water and Environmental Agency participates through the Environmental Information Network of Andalusia (REDIAM).
- River Basin Management Plans corresponding to the Internal Basins of Andalusia for the period 2015-2021 have been presented. Their priority is the compliance with the targets corresponding to purification, quality of groundwater and improvement of cost recovery by means of volumetric pricing.
- The enlargement process of protected area in Andalusia continues. We must highlight the enlargement of the Marismas del Odiel Natural Area (47,000 ha) and the enlargement by more than 37,000 ha of the protected maritime-terrestrial area in which 9 SPAs have been declared.
- Regarding environmental quality, a new regulation on waste and another one on contaminated soils are coming into force. The purpose of the former is to unify the authorisation system for coastal and continental water by simplifying proceedings and updating the pollution limits while reinforcing environmental quality targets. The latter sets forth the preparation of inventories with detailed information on sites and the type of activities carried out in polluted areas.
- In October 2015, the Energy Strategy of Andalusia 2020 was approved; it is a strategic document establishing the main lines of the Andalusian energy policy in the horizon 2020.

ARAGON

GEOGRAPHIC AND ADMINISTRATIVE INFORMATION

Statute of Autonomy: Organic Law 8/82, of 10 August. Reform approved by virtue of Organic Law 5/2007, of 20 April
Area (INE): 47,720 km²
Capital: Zaragoza **Provinces:** 3 **Municipalities:** 731
Population (2015): 1,317,847 inhab.
Population density (2015): 27.6 inhab./km²
Change in No. of inhabitants (%) 2000-2015: 10.8 / **2014-2015:** -0.6

SOCIO-ECONOMIC INFORMATION

EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Aragon	5.9	20.3	6.1	67.7
Spain	4.1	13.9	6.0	76.0

GVA SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Aragon	5.2	20.9	5.3	59.3
Spain	2.3	15.5	5.0	68.0

UNEMPLOYMENT RATE						
2007	2010	2011	2012	2013	2014	2015
5.3	15.0	17.1	18.7	21.4	20.2	16.3
Average in Spain in 2015: 22.1						

GROSS DISPOSABLE HOUSEHOLD INCOME (2013)			
SCOPE	€/inhab.	Spain=100	2012-2013 Change (%)
Aragon	15,351	109.2	-0.8
Spain	14,059	100.0	-0.5

Source: INE (for all variables). Note: percentages may not add up to 100 per cent due to being rounded to one decimal place

ENVIRONMENTAL INFORMATION

LAND

LAND DISTRIBUTION IN % (2013)					
Scope	Water	Artificial	Agriculture	Forests and semi-wild areas	Wetlands
Aragon	0.7	1.0	43.5	54.7	0.1
Spain	0.8	2.5	41.9	54.6	0.2
Source: MAGRAMA					

No. OF POLLUTED SITES UP TO 2015		
Scope	Declared	Decontaminated/ Recovered
Aragon	10	4
Source: data provided by the RFP		

NATURE

PROTECTED NATURAL AREAS (2015)		
Protected Natural Areas		
Number	Surface area (ha)	Visits
17	256,152,3	388,392
Visits to Interpretation Centres Source: data provided by the RFP		

WILDLIFE: SPECIES INCLUDED IN THE CATALOGUE AND EXOTIC INVASIVE SPECIES (2015)			
No. of species included in the Regional Catalogue of Threatened Species		Spanish Catalogue of Exotic Invasive Species. No. of species included in the Catalogue of TS	
Fauna	Flora	Fauna	Flora
93	136	28	17
Source: data provided by the RFP			

FOREST FIRES						
Year / Period	No. of events		Forest area (ha)			
			Total (Woody + herbaceous area)	Woody		Herbaceous*
	Incipient fires (<1ha)	Fires (>1ha)		Wooded area	Scrubland and pastures	Total woody area	Total herbaceous area
2015	266	74	9,033.7	5,263.9	3,769.9	9,033.7	0.0
*No differentiation between herbaceous and woody treeless areas Source: MAGRAMA							

WASTE

WASTE PER INHABITANT (kg/inhab.)					
Year	Household / municipal waste	Hazardous waste	Selective collection of paper / cardboard	Selective collection of glass	Selective collection of packaging
2010	399.5	58.3	22.9	17.2	12.5
2015	327.7	53.1	17.0	12.6	12.8

Source: data provided by the RFP

WATER

AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day)							
Scope	2005	2010	2011	2012	2013	2005-2013 Change (%)	2012-2013 Change (%)
Aragon	154	141	129	135	129	-16.2	-4.4
Spain	168	142	140	135	130	-22.6	-3.7

Source: INE

AIR

AIR QUALITY IN RELATION TO THE PROTECTION OF HUMAN HEALTH					
NO_2: average annual concentration in urban areas (µg/m³). Year 2014					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
53.3	33.3	13.3	0.0	0.0	15
PM10: average annual concentration in urban areas (µg/m³). Year 2014					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
0.0	81.8	18.2	0.0	0.0	11
PM2,5: average annual concentration in urban areas (µg/m³). Year 2014					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2014
0.0	100.0	0.0	0.0	0.0	2
O_3: maximum daily levels of eight-hour running average (µg/m³). Year 2014					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2014
21.4	78.6	0.0			14

Note: LET= Lower Evaluation Threshold; UET= Upper Evaluation Threshold; ALV= Annual Limit Value; LTT= Long Term Target; TV= Target Value.
Source: MAGRAMA

ENERGY

ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab,)							
Scope	2010	2011	2012	2013	2014	2015	2010-2015 Change (%)
Aragon	7.852	7.727	7.587	7.501	7.613	7.780	-0.9
Spain	5.863	5.735	5.652	5.540	5.519	5.639	-3.8

Source: data compiled by the authors from the REE and INE data

BUSINESS RESPONSE AND SOCIAL PARTICIPATION

GREEN ECONOMY		
Green Jobs		Organic Labelling
Year	No. of Jobs	No. of labelled products in 2015
-	No data	56

Source: data provided by the RFP

CITIZENS ADVICE BUREAU: RESPONSE TO INFORMATION REQUESTS			
Requests for information in 2015			
Total number	Answered within a term of < 1 month	Answered within a term of > 1 month	Unanswered
17,448	16,329	1,119	0

Source: data provided by the RFP

ENVIRONMENTAL REPORTS

Environmental Report of Aragón. Last year: 2013

- http://www.aragon.es/estaticos/GobiernoAragon/Departamentos/AgricultureGanaderiaMedioAmbiente/TEMAS_MEDIO_AMBIENTE/AREAS/INFORMACION_DATOS_AMBIENTALES/InformeEstadoMedioAmbienteAragon/AGMA_INFORME_MA_2013.pdf

LINKS TO THE AUTONOMOUS COMMUNITY'S ENVIRONMENTAL WEBSITES OF INTEREST

- www.aragon.es
- http://www.aragon.es/Temas/MedioAmbiente

ASTURIAS

GEOGRAPHIC AND ADMINISTRATIVE INFORMATION

Statute of Autonomy: Organic Law 7/81, of 30 December
Area (INE): 10,604 km²
Average coastline length: 656.0 km (6.4% of the Spanish total)
Capital: Oviedo **Provinces:** 1 **Municipalities:** 78
Population (2015): 1,051,299 inhab.
Population density (2015): 99.1 inhab./km²
Change in No. of inhabitants (%) 2000-2015: -2.4 / **2014-2015:** -1.0

SOCIO-ECONOMIC INFORMATION

EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Asturias	3.4	15.0	5.4	76.2
Spain	4.1	13.9	6.0	76.0

GVA SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Asturias	1.2	19.6	6.0	64.1
Spain	2.3	15.5	5.0	68.0

UNEMPLOYMENT RATE						
2007	2010	2011	2012	2013	2014	2015
8.4	15.9	17.4	21.8	24.1	21.1	19.1
Average in Spain in 2015: 22.1						

GROSS DISPOSABLE HOUSEHOLD INCOME (2013)			
SCOPE	€/inhab.	Spain=100	2012-2013 Change (%)
Asturias	14,449	102.8	-0.3
Spain	14,059	100.0	-0.5

Source: INE (for all variables). Note: percentages may not add up to 100 per cent due to being rounded to one decimal place

ENVIRONMENTAL INFORMATION

LAND

LAND DISTRIBUTION IN % (2013)					
Scope	Water	Artificial	Agriculture	Forests and semi-wild areas	Wetlands
Asturias	0.3	2.3	24.8	72.6	0.1
Spain	0.8	2.5	41.9	54.6	0.2
Source: MAGRAMA					

No. OF POLLUTED SITES UP TO 2015		
Scope	Declared	Decontaminated/ Recovered
Asturias	1	1
Source: Regional Ministry of Infrastructures, Land Planning and the Environment		

NATURE

PROTECTED NATURAL AREAS (2015)		
Protected Natural Areas		
Number	Surface area (ha)	Visits
66	350,460.5	51,728
Visits to Interpretation Centres Source: Regional Ministry of Rural Development and Natural Resources		

WILDLIFE: SPECIES INCLUDED IN THE CATALOGUE AND EXOTIC INVASIVE SPECIES (2015)			
No. of species included in the Regional Catalogue of Threatened Species		Spanish Catalogue of Exotic Invasive Species. No. of species included in the Catalogue of TS	
Fauna	Flora	Fauna	Flora
20	13	No data	No data
Source: 2014 Environmental Profile of Asturias Regional Ministry of Rural Development and Natural Resources			

FOREST FIRES							
Year / Period	No. of events		Forest area (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (<1ha)	Fires (>1ha)		Wooded area	Scrubland and pastures	Total woody area	Total herbaceous area
2015	717	824	20,597.4	3,570.5	16,936.1	20,506.5	90.9
Source: MAGRAMA							

WASTE

WASTE PER INHABITANT (kg/inhab.)					
Year	Household / municipal waste	Hazardous waste	Selective collection of paper / cardboard	Selective collection of glass	Selective collection of packaging
2010	461	No data	58.8	14.6	9.5
2015	No data	No data	53.1	14.8	9.9

Selective collection of paper includes data from COGERSA (household collection) and from other managers (commercial and industrial collection).
Source: Regional Ministry of Infrastructures, Land Planning and the Environment

WATER

AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day)							
Scope	2005	2010	2011	2012	2013	2005-2013 Change (%)	2012-2013 Change (%)
Asturias	183	156	150	128	122	-33.3	-4.7
Spain	168	142	140	135	130	-22.6	-3.7

Source: INE

AIR

AIR QUALITY IN RELATION TO THE PROTECTION OF HUMAN HEALTH					
NO_2: average annual concentration in urban areas (µg/m³). Year 2014					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
19.0	61.9	14.3	4.8	0.0	21
PM10: average annual concentration in urban areas (µg/m³). Year 2014					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
0.0	25.0	50.0	20.0	5.0	20
PM2,5: average annual concentration in urban areas (µg/m³). Year 2014					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2014
0.0	57.1	42.9	0.0	0.0	7
O_3: maximum daily levels of eight-hour running average (µg/m³). Year 2014					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2014
61.9	38.1	0.0			21

Note: LET= Lower Evaluation Threshold; UET= Upper Evaluation Threshold; ALV= Annual Limit Value; LTT= Long Term Target; TV= Target Value.
Source: MAGRAMA

ENERGY

ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab,)							
Scope	2010	2011	2012	2013	2014	2015	2010-2015 Change (%)
Asturias	9.947	10.134	9.597	9.750	9.713	9.914	-0.3
Spain	5.863	5.735	5.652	5.540	5.519	5.639	-3.8

Source: data compiled by the authors from the REE and INE data

BUSINESS RESPONSE AND SOCIAL PARTICIPATION

GREEN ECONOMY		
Green Jobs		Organic Labelling
Year	No. of Jobs	No. of labelled products in 2015
-	No data	0

Source: Regional Ministry of Infrastructures, Land Planning and the Environment

CITIZENS ADVICE BUREAU: RESPONSE TO INFORMATION REQUESTS			
Requests for information in 2014			
Total number	Answered within a term of < 1 month	Answered within a term of > 1 month	Unanswered
49,212	45,826	3,388	0

Source: Regional Ministry of Infrastructures, Land Planning and the Environment

ENVIRONMENTAL REPORTS

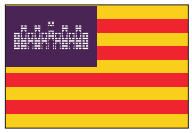
- Environmental Profile of Asturias 2014
  http://www.asturias.es/medioambiente/articulos/ficheros/Perfil%20Ambiental%20Asturias2014.pdf

LINKS TO THE AUTONOMOUS COMMUNITY'S ENVIRONMENTAL WEBSITES OF INTEREST

- Environmental Network of Asturias: Environmental Information (Institutional Website)
  https://www.asturias.es/portal/site/medioambiente/menuitem.902b26b36a5e1f63e7cc2a20a6108a0c/?vgnextoid=3cfda5c7be9fa110VgnVCM1000006a01a8c0RCRD&i18n.http.lang=es
- Consorcio para la Gestión de los Residuos Sólidos en Asturias (COGERSA)
  www.cogersa.es
- Consorcio de Aguas de Asturias
  www.consorcioaa.com

RELEVANT DATA OR INFORMATION

- Approval of the 2nd Plan for the Management of Wolves in Asturias. Decree 23/2015, of 25 March, approving the 2nd Plan for the Management of Wolves in Asturias
  https://sede.asturias.es/bopa/disposiciones/repositorio/LEGISLACION40/66/11/001U005I350001.pdf



BALEARIC ISLANDS

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
Area (INE): 4,992 km²
Average coastline length: 1,330 km (12.9% of the total)
Capital: Palma de Mallorca **Provinces:** 1 **Municipalities:** 67
Population (2015): 1,104,479 inhab.
Population density (2015): 221.2 inhab./km²
Change in No. of inhabitants (%) 2000-2015: 30.6 / **2014-2015:** 0.1

SOCIO-ECONOMIC INFORMATION

EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Balearic Islands	1.0	7.4	8.8	82.7
Spain	4.1	13.9	6.0	76.0

GVA SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Balearic Islands	0.3	6.2	5.2	79.1
Spain	2.3	15.5	5.0	68.0

UNEMPLOYMENT RATE						
2007	2010	2011	2012	2013	2014	2015
7.2	20.1	21.9	23.2	22.3	20.0	17.3
Average in Spain in 2015: 22.1						

GROSS DISPOSABLE HOUSEHOLD INCOME (2013)			
SCOPE	€/inhab.	Spain=100	2012-2013 Change (%)
Balearic Islands	14,372	102.2	-1.4
Spain	14,059	100.0	-0.5

Source: INE (for all variables). Note: percentages may not add up to 100 per cent due to being rounded to one decimal place

ENVIRONMENTAL INFORMATION

LAND

LAND DISTRIBUTION IN % (2013)					
Scope	Water	Artificial	Agriculture	Forests and semi-wild areas	Wetlands
Balearic Islands	0.2	6.9	48.6	43.7	0.6
Spain	0.8	2.5	41.9	54.6	0.2
Source: MAGRAMA					

No. OF POLLUTED SITES UP TO 2015		
Scope	Declared	Decontaminated/ Recovered
Balearic Islands	1	3

The 3 soils were voluntarily recovered without having been previously declared (option Art. 38 of Act 22/2011). Source: Department of Waste and Contaminated Soils Directorate General for Environmental Education and Quality and Climate Change. Regional Ministry of the Environment, Agriculture and Fisheries

NATURE

PROTECTED NATURAL AREAS (2015)		
Protected Natural Areas		
Number	Surface area (ha)	Visits
12	99.856 (74,255.6 terrestrial and 25,601.0 marine)	No data

Source: Directorate General for Natural Areas and Biodiversity Regional Ministry of the Environment, Agriculture and Fisheries

WILDLIFE: SPECIES INCLUDED IN THE CATALOGUE AND EXOTIC INVASIVE SPECIES (2015)			
No. of species included in the Regional Catalogue of Threatened Species		Spanish Catalogue of Exotic Invasive Species. No. of species included in the Catalogue of TS	
Fauna	Flora	Fauna	Flora
17	75	15	17

Source: Directorate General for Natural Areas and Biodiversity. Regional Ministry of the Environment, Agriculture and Fisheries

FOREST FIRES							
Year / Period	No. of events		Forest area (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (<1ha)	Fires (>1ha)		Wooded area	Scrubland and pastures	Total woody area	Total herbaceous area
2015	66	11	109.4	54.8	49.0	103.8	5.6
Annual average 10-year period 2005-2014	107	15	705.3	384.2	130.1	514.3	191.0

Source: 2015 Data: MAGRAMA.
Data corresponding to annual 10-year period average: Directorate General for Natural Areas and Biodiversity. Regional Ministry of the Environment, Agriculture and Fisheries

WASTE

WASTE PER INHABITANT (kg/inhab.)					
Year	Household / municipal waste	Hazardous waste	Selective collection of paper / cardboard	Selective collection of glass	Selective collection of packaging
2010	589.6	31.5	38.2	24.5	13.1
2015	625.5	16.2 (2014)	37.0	28.7	17.0

Source: Data provided by the Environmental Quality Department from information published by Island Councils

WATER

AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day)							
Scope	2005	2010	2011	2012	2013	2005-2013 Change (%)	2012-2013 Change (%)
Balearic Islands	143	120	124	132	141	-1.4	6.8
Spain	168	142	140	135	130	-22.6	-3.7

Source: INE

AIR

AIR QUALITY IN RELATION TO THE PROTECTION OF HUMAN HEALTH					
NO_2: average annual concentration in urban areas (µg/m³). Year 2014					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
88.2	5.9	0.0	5.9	0.0	17
PM10: average annual concentration in urban areas (µg/m³). Year 2014					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
0.0	80.0	20.0	0.0	0.0	15
PM2,5: average annual concentration in urban areas (µg/m³). Year 2014					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2014
0.0	66.7	33.3	0.0	0.0	3
O_3: maximum daily levels of eight-hour running average (µg/m³). Year 2014					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2014
6.3	87.5	6.3			16

Note: LET= Lower Evaluation Threshold; UET= Upper Evaluation Threshold; ALV= Annual Limit Value; LTT= Long Term Target; TV= Target Value.
Source: MAGRAMA

ENERGY

ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab,)							
Scope	2010	2011	2012	2013	2014	2015	2010-2015 Change (%)
Balearic Islands	5.280	5.160	5.201	5.104	5.062	5.248	-0.6
Spain	5.863	5.735	5.652	5.540	5.519	5.639	-3.8

Source: data compiled by the authors from the REE and INE data

BUSINESS RESPONSE AND SOCIAL PARTICIPATION

GREEN ECONOMY		
Green Jobs		Organic Labelling
Year	No. of Jobs	No. of labelled products in 2015
2015	8,983 (2.1% total jobs)	9

Information on green jobs: Estimate prepared by the Economic Programming Service. Directorate General for Employment and the Economy. Regional Ministry of Labour, Commerce and Industry
Data on organic labelling: Environmental Quality Department. Directorate General for Environmental Education and Quality and Waste. Regional Ministry of the Environment, Agriculture and Fisheries

CITIZENS ADVICE BUREAU: RESPONSE TO INFORMATION REQUESTS			
Requests for information in 2015			
Total number	Answered within a term of < 1 month	Answered within a term of > 1 month	Unanswered
2,515	2,510	5	0

Source: Environmental Quality Department. Directorate General for Environmental Education and Quality and Waste. Regional Ministry of the Environment, Agriculture and Fisheries

ENVIRONMENTAL REPORTS

- Full Report 2008-2011 and Situation Report 2012-2013
  http://mediambient.caib.es/dgcc/estatmediambient

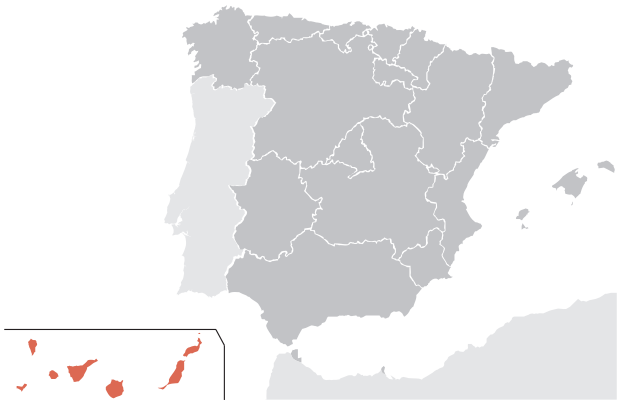
LINKS TO WEBSITES OF INTEREST ON THE ENVIRONMENT

- Government of the Balearic Islands: www.caib.es
- Spatial Data: www.ideib.es
- Majorca Council: www.conselldemallorca.net
- Majorca Council: www.conselldemallorca.net
- Eivissa Council: www.conselldeivissa.es
- Minorca Council: www.cime.es
- Formentera Council: www.consellinsulardeformentera.cat

RELEVANT DATA OR INFORMATION

- Balearic Islands Forest Plan 2015-2035 (Decree 11/2015, Official Journal of the Balearic Islands 40 of 21/03/2015)
- Agricultural Law of the Balearic Islands (Act 12/2014, Official Journal of the Balearic Islands 175 of 23/12/2014)
- River Basin Management Plan of the River Basin District of the Balearic Islands (Royal Decree 701/2015, Official State Journal 171 of 18/07/2015)
- Management Plans of the Natural 2000 Network: Coves, Temporary Ponds, Lagoons in Majorca, es Trenc - Salt Marshes of Campos and Mondragó (Decree 14/2015 Official Journal of the Balearic Islands no, 051 Ext. 2015)
- 4th General Plan for the Defence against Forest Fires of the Balearic Islands, 2015-2024 (Decree 22/2015, Official Journal of the Balearic Islands no. 056 of 2015)
- Amendment of the Master Plan of the Energy Sector of the Balearic Islands on the spatial planning of renewable energies (Decree 33/2015, Official Journal of the Balearic Islands no. 073 of 2015)
- Regulation of the extraction activities of marine flora and fauna and underwater activities of the marine reserves of inland waters of the coasts of the Balearic Islands (Decree 41/2015, Official Journal of the Balearic Islands no. 077 of 2015)
- Natura 2000 Management Plan of the Cabrera Archipelago (Decree 47/2015 Official Journal of the Balearic Islands no. 079 Ext. of 2015)
- Natura 2000 Management Plan of the Eivissa and Formentera Salt Marshes (Decree 48/2015 Official Journal of the Balearic Islands no. 077 Ext. of 2015)
- Natura 2000 Management Plan of the Tramuntana Mountain Range (Decree 49/2015 Official Journal of the Balearic Islands no. 079 Ext. of 2015)

CANARY ISLANDS



GEOGRAPHIC AND ADMINISTRATIVE INFORMATION

Statute of Autonomy: Organic Law 10/82, of 10 August
Area (INE): 7,447 km²
Average coastline length: 1,485 km (14.4% of the Spanish total)
Capital: Las Palmas de Gran Canaria and Santa Cruz de Tenerife
Provinces: 2 **Municipalities:** 88
Population (2015): 2,100,306 inhab.
Population density (2015): 282.0 inhab./km²
Change in No. of inhabitants (%) 2000-2015: 22.4 / **2014-2015:** -0.2

SOCIO-ECONOMIC INFORMATION

EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Canary Islands	3.0	4.5	5.2	87.3
Spain	4.1	13.9	6.0	76.0

GVA SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Canary Islands	1.4	7.1	4.3	78.0
Spain	2.3	15.5	5.0	68.0

UNEMPLOYMENT RATE						
2007	2010	2011	2012	2013	2014	2015
10.5	28.6	29.3	32.6	33.7	32.4	29.1
Average in Spain in 2015: 22.1						

GROSS DISPOSABLE HOUSEHOLD INCOME (2013)			
SCOPE	€/inhab.	Spain=100	2012-2013 Change (%)
Canary Islands	11,989	85.3	-0.2
Spain	14,059	100.0	-0.5

Source: INE (for all variables). Note: percentages may not add up to 100 per cent due to being rounded to one decimal place

ENVIRONMENTAL INFORMATION

LAND

LAND DISTRIBUTION IN % (2013)					
Scope	Water	Artificial	Agriculture	Forests and semi-wild areas	Wetlands
Canary Islands	0.2	5.2	18.5	76.1	0.0
Spain	0.8	2.5	41.9	54.6	0.2
Source: MAGRAMA					

NATURE

PROTECTED AREAS (2015)				
Total protected land area (ha)	Protected Natural Areas (ha)	Natura 2000 Network (ha)	Biosphere Reserves (ha)	RAMSAR Wetlands (ha)
575,613.5	302,133.1	347,952.3	467,647.0	95.2
Source: MAGRAMA				

FOREST FIRES							
Year / Period	No. of events		Forest area (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (<1ha)	Fires (>1ha)		Wooded area	Scrubland and pastures	Total woody area	Total herbaceous area
2015	80	12	106.6	28.9	32.1	61.0	45.6
Source: MAGRAMA							

WASTE

HOUSEHOLD WASTE COLLECTED PER INHABITANT (kg/inhab.)			
2010	2011	2012	2013
609.3	569.6	555.3	508.5

Source: INE

WATER

AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day)							
Scope	2005	2010	2011	2012	2013	2005-2013 Change (%)	2012-2013 Change (%)
Canary Islands	152	151	152	151	143	-5.9	-5.3
Spain	168	142	140	135	130	-22.6	-3.7

Source: INE

AIR

AIR QUALITY IN RELATION TO THE PROTECTION OF HUMAN HEALTH					
NO_2: average annual concentration in urban areas (µg/m³). Year 2014					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
78.7	19.1	2.1	0.0	0.0	47
PM10: average annual concentration in urban areas (µg/m³). Year 2014					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
2.1	53.2	34.0	10.6	0.0	47
PM2,5: average annual concentration in urban areas (µg/m³). Year 2014					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2014
36.6	58.5	4.9	0.0	0.0	41
O_3: maximum daily levels of eight-hour running average (µg/m³). Year 2014					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2014
75.0	25.0	0.0			40

Note: LET= Lower Evaluation Threshold; UET= Upper Evaluation Threshold; ALV= Annual Limit Value; LTT= Long Term Target; TV= Target Value.
Source: MAGRAMA

ENERGY

ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab,)							
Scope	2010	2011	2012	2013	2014	2015	2010-2015 Change (%)
Canary Islands	4.199	4.171	4.198	4.070	4.076	4.127	-1.7
Spain	5.863	5.735	5.652	5.540	5.519	5.639	-3.8

Source: data compiled by the authors from the REE and INE data

ENVIRONMENTAL REPORTS

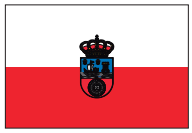
- The Environment in the Canary Islands. Environmental Situation Reports

LINKS TO THE AUTONOMOUS COMMUNITY'S ENVIRONMENTAL WEBSITES OF INTEREST

- Environmental Information System of the Canary Islands (SIAM, Spanish acronym)
  http://www.gobiernodecanarias.org/medioambiente/piac/temas/

RELEVANT DATA OR INFORMATION

- The **Environmental Information System of the Canary Islands (SIMAC)** is the main reference point to access the environmental information generated in the Canary Islands. Moreover, it enables interaction with the Administration and citizen participation on environmental matters as well as the centralised and homogeneous management of the environmental information generated in the Canary Islands.



CANTABRIA

GEOGRAPHIC AND ADMINISTRATIVE INFORMATION

Statute of Autonomy: Organic Law 8/1981, of 30 December, on the Statute of Autonomy of Cantabria
Area (INE): 5,321 km^2
Average coastline length: 615.0 km (6.0% of the Spanish total)
Capital: Santander **Provinces:** 1 **Municipalities:** 102
Population (2015): 585,179 inhab.
Population density (2015): 110.0 inhab./km^2
Change in No. of inhabitants (%) 2000-2015: 10.2 / **2014-2015:** -0.6

SOCIO-ECONOMIC INFORMATION

EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Cantabria	3.2	15.2	5.8	75.7
Spain	4.1	13.9	6.0	76.0

GVA SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Cantabria	1.3	18.1	6.3	65.1
Spain	2.3	15.5	5.0	68.0

UNEMPLOYMENT RATE						
2007	2010	2011	2012	2013	2014	2015
6.0	13.7	15.3	17.8	20.4	19.4	17.7
Average in Spain in 2015: 22.1						

GROSS DISPOSABLE HOUSEHOLD INCOME (2013)			
SCOPE	€/inhab.	Spain=100	2012-2013 Change (%)
Cantabria	13,761	97.9	0.4
Spain	14,059	100.0	-0.5

Source: INE (for all variables). Note: percentages may not add up to 100 per cent due to being rounded to one decimal place

ENVIRONMENTAL INFORMATION

LAND

LAND DISTRIBUTION IN % (2013)					
Scope	Water	Artificial	Agriculture	Forests and semi-wild areas	Wetlands
Cantabria	1.0	4.1	26.4	68.2	0.4
Spain	0.8	2.5	41.9	54.6	0.2
Source: MAGRAMA					

No. OF POLLUTED SITES UP TO 2015		
Scope	Declared	Decontaminated/ Recovered
Cantabria	0	20
Source: Government of Cantabria		

NATURE

PROTECTED AREAS (2015)				
Total protected land area (ha)	Protected Natural Areas (ha)	Natura 2000 Network (ha)	Biosphere Reserves (ha)	RAMSAR Wetlands (ha)
151,020.4	150,980.8	145,807.8	14,965.9	5,602.2
Source: MAGRAMA				

FOREST FIRES							
Year / Period	No. of events		Forest area (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (<1ha)	Fires (>1ha)		Wooded area	Scrubland and pastures	Total woody area	Total herbaceous area
2015	97	866	13,138.4	3,330.8	8,141.5	11,472.2	1,666.2
Source: MAGRAMA							

WASTE

WASTE PER INHABITANT (kg/inhab.)					
Year	Household / municipal waste	Hazardous waste	Selective collection of paper / cardboard	Selective collection of glass	Selective collection of packaging
2010	618.9	130.7	22.7	17.7	8.5
2015	543.9 (2014)	128.8 (2014)	18.4 (2014)	17.4 (2014)	8.9 (2014)

Source: Government of Cantabria

WATER

AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day)							
Scope	2005	2010	2011	2012	2013	2005-2013 Change (%)	2012-2013 Change (%)
Cantabria	193	170	158	151	144	-25.4	-4.6
Spain	168	142	140	135	130	-22.6	-3.7

Source: INE

AIR

AIR QUALITY IN RELATION TO THE PROTECTION OF HUMAN HEALTH					
NO_2: average annual concentration in urban areas (µg/m³). Year 2014					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
18.2	72.7	9.1	0.0	0.0	11
PM10: average annual concentration in urban areas (µg/m³). Year 2014					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
0.0	36.4	63.6	0.0	0.0	11
PM2,5: average annual concentration in urban areas (µg/m³). Year 2014					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2014
0.0	80.0	0.0	20.0	0.0	5
O_3: maximum daily levels of eight-hour running average (µg/m³). Year 2014					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2014
0.0	100.0	0.0			8

Note: LET= Lower Evaluation Threshold; UET= Upper Evaluation Threshold; ALV= Annual Limit Value; LTT= Long Term Target; TV= Target Value.
Source: MAGRAMA

ENERGY

ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab,)							
Scope	2010	2011	2012	2013	2014	2015	2010-2015 Change (%)
Cantabria	7.374	7.541	7.408	7.409	7.341	7.190	-2.5
Spain	5.863	5.735	5.652	5.540	5.519	5.639	-3.8

Source: data compiled by the authors from the REE and INE data

BUSINESS RESPONSE AND SOCIAL PARTICIPATION

CITIZENS ADVICE BUREAU: RESPONSE TO INFORMATION REQUESTS			
Requests for information in 2015			
Total number	Answered within a term of < 1 month	Answered within a term of > 1 month	Unanswered
2,859	2,359	5.35	0

Source: Data exclusive to the Consejería de Universidades e Investigación, Medio Ambiente y Política Social

LINKS TO THE AUTONOMOUS COMMUNITY'S ENVIRONMENTAL WEBSITES OF INTEREST

- http://www.cantabria.es
- http://www.medioambientecantabria.es
- 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

GEOGRAPHIC AND ADMINISTRATIVE INFORMATION

Statute of Autonomy: Organic Law 14/2007,
of 30 November, on the reform of the Statute of Autonomy of Castilla y León
Area (INE): 94,224 km^2
Capital: Valladolid **Provinces:** 9 **Municipalities:** 2,248
Population (2015): 2,472,052 inhab.
Population density (2015): 26.2 inhab./km^2
Change in No. of inhabitants (%) 2000-2015: -0.3 / **2014-2015:** -0.9

SOCIO-ECONOMIC INFORMATION

EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Castilla y León	7.2	16.3	6.9	69.6
Spain	4.1	13.9	6.0	76.0

GVA SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Castilla y León	4.0	20.0	5.6	61.3
Spain	2.3	15.5	5.0	68.0

UNEMPLOYMENT RATE						
2007	2010	2011	2012	2013	2014	2015
7.1	15.8	16.9	19.8	21.8	20.8	18.3
Average in Spain in 2015: 22.1						

GROSS DISPOSABLE HOUSEHOLD INCOME (2013)			
SCOPE	€/inhab.	Spain=100	2012-2013 Change (%)
Castilla y León	14,007	99.6	-1.2
Spain	14,059	100.0	-0.5

Source: INE (for all variables). Note: percentages may not add up to 100 per cent due to being rounded to one decimal place

ENVIRONMENTAL INFORMATION

LAND

LAND DISTRIBUTION IN % (2013)					
Scope	Water	Artificial	Agriculture	Forests and semi-wild areas	Wetlands
Castilla y León	0.5	1.3	47.1	51.1	0.0
Spain	0.8	2.5	41.9	54.6	0.2
Source: MAGRAMA					

No. OF POLLUTED SITES UP TO 2015		
Scope	Declared	Decontaminated/ Recovered
Castilla y León	7	5
Source: Department of Waste Directorate General for Environmental Quality and Sustainability. Regional Ministry of Public Works and the Environment		

NATURE

PROTECTED NATURAL AREAS (2015)		
Protected Natural Areas		
Number	Surface area (ha)	Visits
28	771.125	408,252 personas
Source: Department of Protected Natural Areas. Directorate General for the Natural Environment. Regional Ministry of Public Works and the Environment		

WILDLIFE: SPECIES INCLUDED IN THE CATALOGUE AND EXOTIC INVASIVE SPECIES (2015)			
No. of species included in the Regional Catalogue of Threatened Species		Spanish Catalogue of Exotic Invasive Species. No. of species included in the Catalogue of TS	
Fauna	Flora	Fauna	Flora
45	65	25	7
Source: Department of Protected Natural Areas. Directorate General for the Natural Environment. Regional Ministry of Public Works and the Environment			

FOREST FIRES							
Year / Period	No. of events		Forest area (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (<1ha)	Fires (>1ha)		Wooded area	Scrubland and pastures	Total woody area	Total herbaceous area
2015	1,154	552	13,010.1	4,198.6	7,561.1	11,759.7	1,250.4
Source: MAGRAMA							

WASTE

WASTE PER INHABITANT (kg/inhab.)					
Year	Household / municipal waste	Hazardous waste	Selective collection of paper / cardboard	Selective collection of glass	Selective collection of packaging
2010	1.2	No data	22.2	16.7	7.8
2015	1.1 (2014)	No data	17.4 (2014)	16.4 (2014)	8.4 (2014)

Source: Department of Waste Management Control. Directorate General for Environmental Quality and Sustainability. Regional Ministry of Public Works and the Environment

WATER

AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day)							
Scope	2005	2010	2011	2012	2013	2005-2013 Change (%)	2012-2013 Change (%)
Castilla y León	162	164	167	149	157	-3.1	5.4
Spain	168	142	140	135	130	-22.6	-3.7

Source: INE

AIR

AIR QUALITY IN RELATION TO THE PROTECTION OF HUMAN HEALTH					
NO_2: average annual concentration in urban areas (µg/m³). Year 2014					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
66.7	30.3	3.0	0.0	0.0	33
PM10: average annual concentration in urban areas (µg/m³). Year 2014					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
10.0	76.7	13.3	0.0	0.0	30
PM2,5: average annual concentration in urban areas (µg/m³). Year 2014					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2014
20.0	80.0	0.0	0.0	0.0	10
O_3: maximum daily levels of eight-hour running average (µg/m³). Year 2014					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2014
11.8	73.5	14.7			34

Note: LET= Lower Evaluation Threshold; UET= Upper Evaluation Threshold; ALV= Annual Limit Value; LTT= Long Term Target; TV= Target Value.
Source: MAGRAMA

ENERGY

ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab,)							
Scope	2010	2011	2012	2013	2014	2015	2010-2015 Change (%)
Castilla y León	5.475	5.292	5.392	5.429	5.434	5.563	1.6
Spain	5.863	5.735	5.652	5.540	5.519	5.639	-3.8

Source: data compiled by the authors from the REE and INE data

BUSINESS RESPONSE AND SOCIAL PARTICIPATION

GREEN ECONOMY		
Green Jobs		Organic Labelling
Year	No. of Jobs	No. of labelled products in 2015
-	6,107	10 with two licenses

Source: Employment: Directorate General for Statistics. Organic Labelling: Department of Waste Management Control. Directorate General for Environmental Quality and Sustainability. Regional Ministry of Public Works and the Environment

CITIZENS ADVICE BUREAU: RESPONSE TO INFORMATION REQUESTS			
Requests for information in 2015			
Total number	Answered within a term of < 1 month	Answered within a term of > 1 month	Unanswered
104	14	80	10

Source: Department of Environmental Education. Directorate General for Environmental Quality and Sustainability. Regional Ministry of Public Works and the Environment

LINKS TO THE AUTONOMOUS COMMUNITY'S ENVIRONMENTAL WEBSITES OF INTEREST

- medioambiente@jcyl.es
- idecyl@jcyl.es
- residuos@jcyl.es
- licencias.cazaypesca@jcyl.es
- subastasdecaza@jcyl.es.

RELEVANT DATA OR INFORMATION

- Legislative Decree 1/2015, of 12 November, approving the recast text on the Act of Environmental Prevention of Castilla y León
  https://www.boe.es/ccaa/bocl/2015/220/h60492-60554.pdf
- Un Viaje Enredado: Educational Materials of the Project LIFE+ NAT ES/699: "MEDWETRIVERS" (Management and follow-up of wetlands and Mediterranean river banks in the Natura 2000 Network of Castilla y León)
  http://www.medioambiente.jcyl.es/web/jcyl/MedioAmbiente/es/Plantilla100Detalle/1246988359553/_/1284497499820/Comunicacion?plantillaObligatoria=PlantillaContenidoNoticiaHome
- Inter-Regional hunting and fishing licenses
  http://www.medioambiente.jcyl.es/web/jcyl/MedioAmbiente/es/Plantilla100/1284351830460/1251181054765/_/_
- Act 4/2015, of 24 March, on the Natural Heritage of Castilla y León.
  https://www.boe.es/boe/dias/2015/04/16/pdfs/BOE-A-2015-4103.pdf
- Master Plan for the implementation and management of the Natura 2000 Network
  http://www.jcyl.es/junta/cp/20140623_Plan_Director_RN2000.pdf

CASTILLA-LA MANCHA

GEOGRAPHIC AND ADMINISTRATIVE INFORMATION

Statute of Autonomy: Organic Law 9/82, of 10 August
Area (INE): 79,461 km²
Capital: Toledo **Provinces:** 5 **Municipalities:** 919
Population (2015): 2,059,191 inhab.
Population density (2015): 25.9 hab/km²
Change in No. of inhabitants (%) 2000-2015: 18.7 / **2014-2015:** -0.9

SOCIO-ECONOMIC INFORMATION

EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Castilla-La Mancha	6.8	15.4	7.0	70.8
Spain	4.1	13.9	6.0	76.0

GVA SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Castilla-La Mancha	6.7	19.8	6.1	58.2
Spain	2.3	15.5	5.0	68.0

UNEMPLOYMENT RATE						
2007	2010	2011	2012	2013	2014	2015
7.7	21.2	23.1	28.6	30.0	29.0	26.4
Average in Spain in 2015: 22,1						

GROSS DISPOSABLE HOUSEHOLD INCOME (2013)			
SCOPE	€/inhab.	Spain=100	2012-2013 Change (%)
Castilla-La Mancha	11,789	83.9	0.8
Spain	14,059	100.0	-0.5

Source: INE (for all variables). Note: percentages may not add up to 100 per cent due to being rounded to one decimal place

ENVIRONMENTAL INFORMATION

LAND

LAND DISTRIBUTION IN % (2013)					
Scope	Water	Artificial	Agriculture	Forests and semi-wild areas	Wetlands
Castilla-La Mancha	0.5	1.1	53.1	45.1	0.2
Spain	0.8	2.5	41.9	54.6	0.2
Source: MAGRAMA					

No. OF POLLUTED SITES UP TO 2015		
Scope	Declared	Decontaminated/ Recovered
Castilla-La Mancha	0	0
Source: Data provided by the RFP		

NATURE

PROTECTED NATURAL AREAS (2015)		
Protected Natural Areas		
Number	Surface area (ha)	Visits
111	582,081.8	1,159,500
Source: Regional Ministry of Agriculture, the Environment and Rural Development		

WILDLIFE: SPECIES INCLUDED IN THE CATALOGUE AND EXOTIC INVASIVE SPECIES (2015)			
No. of species included in the Regional Catalogue of Threatened Species		Spanish Catalogue of Exotic Invasive Species. No. of species included in the Catalogue of TS	
Fauna	Flora	Fauna	Flora
363	426	53	70
Source: Regional Ministry of Agriculture, the Environment and Rural Development			

FOREST FIRES						
Year / Period	No. of events		Forest area (ha)			
			Total (Woody + herbaceous area)	Woody		Herbaceous
	Incipient fires (<1ha)	Fires (>1ha)		Wooded area	Scrubland and pastures	Total woody area	Total herbaceous area
2015	660	259	3,716.5	766.4	2,159.7	2,926.0	790.5
Annual average 10-year period 2005-2014	578	235	6,454.9	3,350.5	2,042.0	5,392.5	1,062.4
Source: Data year 2015 and data corresponding to the annual average of the 10-year period by the Regional Ministry of Agriculture, the Environment and Rural Development							

WASTE

WASTE PER INHABITANT (kg/inhab.)					
Year	Household / municipal waste	Hazardous waste	Selective collection of paper / cardboard	Selective collection of glass	Selective collection of packaging
2010	478.2	60.0	13.6	10.0	8.6
2015	No data	37.5	9.2	11.7	8.8

Municipal waste: data provided by the Household Waste Treatment Centres / HW: 2010 data obtained from the inventory of hazardous waste and 2015 data obtained from the Follow-up and Control Documents on the transfer of hazardous waste originated in Castilla-La Mancha / Packaging: 2010 data provided by the GIS operating in Castilla-La Mancha, plus 2015 data; it does not include the portion corresponding to cartons collected in the yellow container / Glass and Packaging: data provided by the GIS operating in Castilla-La Mancha
Source: Information prepared by the RFP

WATER

AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day)							
Scope	2005	2010	2011	2012	2013	2005-2013 Change (%)	2012-2013 Change (%)
Castilla-La Mancha	174	148	152	142	140	-19.5	-1.4
Spain	168	142	140	135	130	-22.6	-3.7

Source: INE

AIR

AIR QUALITY IN RELATION TO THE PROTECTION OF HUMAN HEALTH					
NO_2: average annual concentration in urban areas (µg/m³). Year 2014					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
57.1	42.9	0.0	0.0	0.0	14
PM10: average annual concentration in urban areas (µg/m³). Year 2014					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
14.3	42.9	42.9	0.0	0.0	7
PM2,5: average annual concentration in urban areas (µg/m³). Year 2014					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2014
40.0	20.0	40.0	0.0	0.0	5
O_3: maximum daily levels of eight-hour running average (µg/m³). Year 2014					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2014
7.1	64.3	28.6			14

Note: LET= Lower Evaluation Threshold; UET= Upper Evaluation Threshold; ALV= Annual Limit Value; LTT= Long Term Target; TV= Target Value.
Source: MAGRAMA

ENERGY

ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab,)							
Scope	2010	2011	2012	2013	2014	2015	2010-2015 Change (%)
Castilla-La Mancha	5.759	5.673	5.665	5.536	5.605	5.617	-2.5
Spain	5.863	5.735	5.652	5.540	5.519	5.639	-3.8

Source: data compiled by the authors from the REE and INE data

BUSINESS RESPONSE AND SOCIAL PARTICIPATION

GREEN ECONOMY		
Green Jobs		Organic Labelling
Year	No. of Jobs	No. of labelled products in 2015
-	13,326	142

Employment data show those jobs included in the CNAE-E.
Source: data provided by the Department of Statistics of the JCCM. Data on jobs with Environmental Certification are provided by the Department of Food Planning and the Department of Statistics
Data on organic labelling: Regional Ministry of the Environment

CITIZENS ADVICE BUREAU: RESPONSE TO INFORMATION REQUESTS			
Requests for information in 2015			
Total number	Answered within a term of < 1 month	Answered within a term of > 1 month	Unanswered
365	340	25	0

Source: Regional Ministry of the Environment

LINKS TO THE AUTONOMOUS COMMUNITY'S ENVIRONMENTAL WEBSITES OF INTEREST

- http://www.castillalamancha.es/gobierno/agrimedambydesrur/estructura/dgapfyen/actuaciones/publicaciones-sobre-biodiversidad-y-espacios-naturales
- http://www.castillalamancha.es/tema/medio-ambiente/calidad-ambiental
- http://www.castillalamancha.es/gobierno/agrimedambydesrur/estructura/dgapfyen/actuaciones/red-natura-2000tramitacion-de-planes-de-gestion-y-declaracion-de-zec
- http://www.castillalamancha.es/tema/medio-ambiente/medio-natural
- http://www.castillalamancha.es/tema/medio-ambiente/cambio-climatico-0
- http://www.castillalamancha.es/gobierno/economiaempresasyempleo/estructura/dgeiem/actuacionesorganismo

CATALONIA

GEOGRAPHIC AND ADMINISTRATIVE INFORMATION

Statute of Autonomy: Organic Law 6/2006, of 19 July, on the reform of the Statute of Autonomy of Catalonia
Area (INE): 32,113 km²
Average coastline length: 811.9 km (7.9% of the Spanish total)
Capital: Barcelona **Provinces:** 4 **Municipalities:** 947
Population (2015): 7,508,106 inhab.
Population density (2015): 233.8 inhab./km²
Change in No. of inhabitants (%) 2000-2015: 19.9 / **2014-2015:** -0.1

SOCIO-ECONOMIC INFORMATION

EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Catalonia	1.6	18.9	5.9	73.6
Spain	4.1	13.9	6.0	76.0

GVA SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Catalonia	1.0	18.2	4.3	67.4
Spain	2.3	15.5	5.0	68.0

UNEMPLOYMENT RATE						
2007	2010	2011	2012	2013	2014	2015
6.5	47.7	19.2	22.5	23.1	20.3	18.6
Average in Spain in 2015: 22.1						

GROSS DISPOSABLE HOUSEHOLD INCOME (2013)			
SCOPE	€/inhab.	Spain=100	2012-2013 Change (%)
Catalonia	16,224	115.4	-0.5
Spain	14,059	100.0	-0.5

Source: INE (for all variables)

ENVIRONMENTAL INFORMATION

LAND

LAND DISTRIBUTION IN % (2013)					
Scope	Water	Artificial	Agriculture	Forests and semi-wild areas	Wetlands
Catalonia	0.6	4.5	34.8	59.9	0.2
Spain	0.8	2.5	41.9	54.6	0.2
Source: MAGRAMA					

No. OF POLLUTED SITES UP TO 2015		
Scope	Declared	Decontaminated/ Recovered
Catalonia	2,374	1,309
Source: Waste Agency of Catalonia		

NATURE

PROTECTED NATURAL AREAS (2015)		
Protected Natural Areas		
Number	Surface area (ha)	Visits
184	106,179.9 (terrestrial and marine)	2,779,000
Visit data estimated (2014). Directorate General for the Natural Environment Source: Department of Natural Environment Planning. Secretariat of the Environment and Sustainability		

WILDLIFE: SPECIES INCLUDED IN THE CATALOGUE AND EXOTIC INVASIVE SPECIES (2015)			
No. of species included in the Regional Catalogue of Threatened Species		Spanish Catalogue of Exotic Invasive Species. No. of species included in the Catalogue of TS	
Fauna	Flora	Fauna	Flora
398	461	No data	No data
Source: Department of Natural Environment Planning. Secretariat of the Environment and Sustainability			

FOREST FIRES							
Year / Period	No. of events		Forest area (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (<1ha)	Fires (>1ha)		Wooded area	Scrubland and pastures	Total woody area	Total herbaceous area
2015	436	70	1,562.3	1,144.0	368.3	1,512.3	49.9
Source: MAGRAMA							

WASTE

WASTE PER INHABITANT (kg/inhab.)					
Year	Household / municipal waste	Hazardous waste	Selective collection of paper / cardboard	Selective collection of glass	Selective collection of packaging
2010	556.9	54.8	60.6	24.1	18.2
2015	484.1 (2014)	61.8 (2014)	36.0 (2014)	21.6 (2014)	17.3

Data on hazardous waste obtained from the Annual Statements of Industrial Waste.
Source: Waste Agency of Catalonia

WATER

AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day)							
Scope	2005	2010	2011	2012	2013	2005-2013 Change (%)	2012-2013 Change (%)
Catalonia	163	130	127	123	117	-28.2	-4.9
Spain	168	142	140	135	130	-22.6	-3.7

Source: INE

AIR

AIR QUALITY IN RELATION TO THE PROTECTION OF HUMAN HEALTH					
NO_2: average annual concentration in urban areas (µg/m³). Year 2014					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
25.8	31.8	12.1	19.7	10.6	66
PM10: average annual concentration in urban areas (µg/m³). Year 2014					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
1.1	34.0	60.6	4.3	0.0	94
PM2,5: average annual concentration in urban areas (µg/m³). Year 2014					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2014
0.0	46.2	53.8	0.0	0.0	39
O_3: maximum daily levels of eight-hour running average (µg/m³). Year 2014					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2014
6.7	43.3	50.0			30

Note: LET= Lower Evaluation Threshold; UET= Upper Evaluation Threshold; ALV= Annual Limit Value; LTT= Long Term Target; TV= Target Value.
Source: MAGRAMA

ENERGY

ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab,)							
Scope	2010	2011	2012	2013	2014	2015	2010-2015 Change (%)
Catalonia	6.527	6.392	6.307	6.126	6.068	6.203	-5.0
Spain	5.863	5.735	5.652	5.540	5.519	5.639	-3.8

Source: data compiled by the authors from the REE and INE data

BUSINESS RESPONSE AND SOCIAL PARTICIPATION

GREEN ECONOMY		
Green Jobs		Organic Labelling
Year	No. of Jobs	No. of labelled products in 2015
-	Between 61,845 and 91,378.	1,997

Estimate according to the Catalan Classification of Economic Activities (CCAE). The figure of 61,845 is calculated according to the most adjusted methodology to Eurostat's EGSS
Sources: Information on green jobs: Department of Sustainable Development. Secretariat of the Environment of Catalonia
Data on organic labelling: Department of Environmental Qualification. Secretariat of the Environment and Sustainability

CITIZENS ADVICE BUREAU: RESPONSE TO INFORMATION REQUESTS			
Requests for information in 2015			
Total number	Answered within a term of < 1 month	Answered within a term of > 1 month	Unanswered
4,737	4,728	2	7

Source: Department of Environmental Information. Secretariat of the Environment and Sustainability

ENVIRONMENTAL REPORTS

- Eight annual reports on the state of the environment since the Act 27/2006
- A full report on the state of the environment every four years together with an executive summary
- Annual statistical publications since 1993

LINKS TO THE AUTONOMOUS COMMUNITY'S ENVIRONMENTAL WEBSITES OF INTEREST

- http://mediambient.gencat.cat/ca/05_ambits_dactuacio/

RELEVANT DATA OR INFORMATION

- During 2016, the works for the publication of the second four-year report 2011-2014 are initiated in compliance with Act 27/2006, of 18 July, on access to environmental information. Besides, the relevant annual environmental report will be prepared with data corresponding to 2015, as well as the publication "Environmental Data of Catalonia", which has been published since 1993.
- In 2015, a new natural park was declared in Catalonia: the Les Capçaleres del Ter i del Freser Natural Park.

CEUTA

GEOGRAPHIC AND ADMINISTRATIVE INFORMATION

Statute of Autonomy: Organic Law 1/1995, of 13 March, on the Statute of Autonomy of Ceuta
Area (INE): 20 km²
Average coastline length: 22.7 km (0.2% of the Spanish total)
Capital: Ceuta **Provinces:** 1 **Municipalities:** 1
Population (2015): 84,263 inhab.
Population density (2015): 4,213.2 inhab./km²
Change in No. of inhabitants (%) 2000-2015: 12.0 / **2014-2015:** -0.8

SOCIO-ECONOMIC INFORMATION

EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Ceuta	0.1	2.4	4.2	93.4
Spain	4.1	13.9	6.0	76.0

GVA SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Ceuta	0.2	5.5	4.0	81.1
Spain	2.3	15.5	5.0	68.0

UNEMPLOYMENT RATE						
2007	2010	2011	2012	2013	2014	2015
21.0	23.9	27.7	37.0	34.8	31.9	27.6
Average in Spain in 2015: 22.1						

GROSS DISPOSABLE HOUSEHOLD INCOME (2013)			
SCOPE	€/inhab.	Spain=100	2012-2013 Change (%)
Ceuta	12,000	85.4	0.4
Spain	14,059	100.0	-0.5

Source: INE (for all variables). Note: percentages may not add up to 100 per cent due to being rounded to one decimal place

ENVIRONMENTAL INFORMATION

NATURE

PROTECTED AREAS (2015)				
Total protected land area (ha)	Protected Natural Areas (ha)	Natura 2000 Network (ha)	Biosphere Reserves (ha)	RAMSAR Wetlands (ha)
630.5	0.0	360.5	0.0	0.0
Source: MAGRAMA				

FOREST FIRES						
Year / Period	No. of events		Forest area (ha)			
			Total (Woody + herbaceous area)	Woody		Herbaceous
	Incipient fires (<1ha)	Fires (>1ha)		Wooded area	Scrubland and pastures	Total woody area	Total herbaceous area
2015	0	2	38.8	22.7	16.1	38.8	0.0
Source: MAGRAMA							

WATER

AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day)							
Scope	2005	2010	2011	2012	2013	2005-2013 Change (%)	2012-2013 Change (%)
Ceuta y Melilla	141	151	156	109	106	-24.8	-2.8
Spain	168	142	140	135	130	-22.6	-3.7

Joint information for Ceuta and Melilla. Source: INE

ENERGY

ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab,)							
Scope	2010	2011	2012	2013	2014	2015	2010-2015 Change (%)
Ceuta	2.700	2.464	2.524	2.399	2.498	2.438	-9.7
Spain	5.863	5.735	5.652	5.540	5.519	5.639	-3.8

Source: data compiled by the authors from the REE and INE data

LINKS TO THE AUTONOMOUS COMMUNITY'S ENVIRONMENTAL WEBSITES OF INTEREST

- http://www.ceuta.es/ceuta/
- http://www.ceuta.es/ceuta/por-consejerias/medio-ambiente-servicios-comunitarios-y-barriadas
- 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 2000 Network Protected Area (SIC-SPA) of "Calamocarro-Benzú" http://www.ceuta.es/porng/plan.html

EXTREMADURA

GEOGRAPHIC AND ADMINISTRATIVE INFORMATION

Statute of Autonomy: Organic Law 1/2011, of 28 January, on the Statute of Autonomy of the Autonomous Community of Extremadura
Area (INE): 41,634 km²
Capital: Mérida **Provinces:** 2 **Municipalities:** 385
Population (2015): 1,092,997 inhab.
Population density (2015): 26.2 inhab./km²
Change in No. of inhabitants (%) 2000-2015: 2.2 / **2014-2015:** -0.6

SOCIO-ECONOMIC INFORMATION

EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Extremadura	10.7	10.3	8.1	70.9
Spain	4.1	13.9	6.0	76.0

GVA SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Extremadura	1.9	16.9	5.7	66.3
Spain	2.3	15.5	5.0	68.0

UNEMPLOYMENT RATE						
2007	2010	2011	2012	2013	2014	2015
13.0	23.0	25.1	33.1	33.9	29.8	29.1
Average in Spain in 2015: 22.1						

GROSS DISPOSABLE HOUSEHOLD INCOME (2013)			
SCOPE	€/inhab.	Spain=100	2012-2013 Change (%)
Extremadura	10,717	76.2	1.1
Spain	14,059	100.0	-0.5

Source: INE (for all variables). Note: percentages may not add up to 100 per cent due to being rounded to one decimal place

ENVIRONMENTAL INFORMATION

LAND

LAND DISTRIBUTION IN % (2013)					
Scope	Water	Artificial	Agriculture	Forests and semi-wild areas	Wetlands
Extremadura	2.0	0.8	31.8	65.4	0.0
Spain	0.8	2.5	41.9	54.6	0.2
Source: MAGRAMA					

No. OF POLLUTED SITES UP TO 2015		
Scope	Declared	Decontaminated/ Recovered
Extremadura	23	2
Source: Directorate General for the Environment. (DGMA). Regional Government of Extremadura		

NATURE

PROTECTED NATURAL AREAS (2015)		
Protected Natural Areas		
Number	Surface area (ha)	Visits
214	1,277,448	199,121
Source: DGMA. Regional Government of Extremadura		

WILDLIFE: SPECIES INCLUDED IN THE CATALOGUE AND EXOTIC INVASIVE SPECIES (2015)			
No. of species included in the Regional Catalogue of Threatened Species		Spanish Catalogue of Exotic Invasive Species. No. of species included in the Catalogue of TS	
Fauna	Flora	Fauna	Flora
363	136	31	16
Source: Regional Catalogue of Threatened Species and LIFE + Invasep Project			

FOREST FIRES							
Year / Period	No. of events		Forest area (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (<1ha)	Fires (>1ha)		Wooded area	Scrubland and pastures	Total woody area	Total herbaceous area
2015	427	315	12,016.2	4,128.5	3,500.7	7,629.2	4,387.0
Annual average 10-year period 2005-2014	489	358	5,924.7	1,627.4	2,297.1	3,924.5	2,000.2
Source: 2015 Data: MAGRAMA. Data Annual average of the 10-year period: DGMA. Regional Government of Extremadura							

WASTE

WASTE PER INHABITANT (kg/inhab.)					
Year	Household / municipal waste	Hazardous waste	Selective collection of paper / cardboard	Selective collection of glass	Selective collection of packaging
2010	490.8	41.90	10.00	7.74	11.01
2015	478.1	28.51	10.90	7.20	10.60

Source: DGMA. Regional Government of Extremadura

WATER

AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day)							
Scope	2005	2010	2011	2012	2013	2005-2013 Change (%)	2012-2013 Change (%)
Extremadura	175	158	141	137	140	-20	2.2
Spain	168	142	140	135	130	-22.6	-3.7

Source: INE

AIR

AIR QUALITY IN RELATION TO THE PROTECTION OF HUMAN HEALTH					
NO_2: average annual concentration in urban areas (µg/m³). Year 2014					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
100.0	0.0	0.0	0.0	0.0	7
PM10: average annual concentration in urban areas (µg/m³). Year 2014					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
7.7	92.3	0.0	0.0	0.0	13
PM2,5: average annual concentration in urban areas (µg/m³). Year 2014					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2014
0.0	100.0	0.0	0.0	0.0	6
O_3: maximum daily levels of eight-hour running average (µg/m³). Year 2014					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2014
28.6	28.6	42.9			7

Note: LET= Lower Evaluation Threshold; UET= Upper Evaluation Threshold; ALV= Annual Limit Value; LTT= Long Term Target; TV= Target Value. Source: MAGRAMA

ENERGY

ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab,)							
Scope	2010	2011	2012	2013	2014	2015	2010-2015 Change (%)
Extremadura	4.508	4.253	4.412	4.408	4.218	4.399	-2.4
Spain	5.863	5.735	5.652	5.540	5.519	5.639	-3.8

Source: data compiled by the authors from the REE and INE data

BUSINESS RESPONSE AND SOCIAL PARTICIPATION

GREEN ECONOMY		
Green Jobs		Organic Labelling
Year	No. of Jobs	No. of labelled products in 2015
	No data	151 companies registered

Source: Directorate General for Agriculture and Livestock Farming for the Regional Government of Extremadura

CITIZENS ADVICE BUREAU: RESPONSE TO INFORMATION REQUESTS			
Requests for information in 2015			
Total number	Answered within a term of < 1 month	Answered within a term of > 1 month	Unanswered
7,795	7,250	545	

Source: DGMA of the Regional Government of Extremadura

ENVIRONMENTAL REPORTS

- Environmental Report of Extremadura (enlace)
- Greenhouse Gas Annual Report for Extremadura 2014 (enlace)

LINKS TO THE AUTONOMOUS COMMUNITY'S ENVIRONMENTAL WEBSITES OF INTEREST

- http://extremambiente.gobex.es/
- http://observatorioclimatico.es/
- http://xtr.gobex.es/repica/
- http://www.invasep.eu/

RELEVANT DATA OR INFORMATION

- Decree 23/2015, of 24 February, governing the legal framework for agricultural, environmental and climate and organic farming subsidies for agricultural practices compatible with the protection and improvement of the environment within the area.
- Royal Decree 38/2015, of 17 March, regulating the nutrition of certain wildlife species with animal by-products not intended for human consumption in the Autonomous Community of Extremadura.
- Decree 49/2015, of 30 March, regulating the legal framework for polluted soils in the Autonomous Community of Extremadura.
- Decree 57/2015, of 7 April, declaring the Monte Público Castañar Gallego de Hervás as Protected Landscape.
- The Regional Ministry of the Environment approves the Strategy of Extremadura against the illegal use of poisoned bait in the natural environment so as to put an end to this issue.
- Order of 25 March 2015 approving the master plan for the use and management of the International Tagus Natural Park.
- Act 16/2015, of 23 April, on the environmental protection of the Autonomous Community of Extremadura.
- Decree 110/2015, of 19 May, regulating the Natura 2000 European environmental network in Extremadura which develops the regulation on the Natura Network (NN) foreseen in Act 8/1998, of 26 June, on the Conservation of Nature and Protected Natural Areas in Extremadura and in the basic laws on the matter.
- Decree 284/2015, of 16 October, establishing the rules for the subsidies to City Councils the municipalities of which are included in the Socio-Economic Influence Area of the Monfragüe National Park also including the call for financial year 2015-2016.
- Resolution of 16 October 2015, of the Regional Ministry, granting the subsidies of the Cooperation Fund for the Association of Municipalities of Extremadura corresponding to 2015.
- Announcement of 24 June 2015, on the notification by means of publication of the corrective action for the procedure for the payment of subsidies for the sustainable development in protected areas, reproduction areas of protected species or in key habitats corresponding to the call established by virtue of Order of 21 May 2014.
- Announcement of 2 September 2015, on the notification by means of publication of the loss of the right to obtain subsidies for the sustainable development in protected areas, reproduction areas of protected species or in key habitats corresponding to the call established by virtue of Order of 21 May 2014.
- Announcement of 12 August 2015, on the notification by means of publication of the loss of the right to obtain subsidies for the sustainable development in protected areas, reproduction areas of protected species or in key habitats corresponding to the call established by virtue of Order of 21 May 2014.

GALICIA

GEOGRAPHIC AND ADMINISTRATIVE INFORMATION

Statute of Autonomy: Organic Law 1/1981, of 6 April, on the Statute of Autonomy of Galicia
Area (INE): 29,575 km²
Average coastline length: 1,890 km (18.4% of the Spanish total)
Capital: Santiago de Compostela **Provinces:** 4 **Municipalities:** 315
Population (2015): 2,732,347 inhab.
Population density (2015): 92.4 inhab./km²
Change in No. of inhabitants (%) 2000-2015: 0.0 / **2014-2015:** -0.6

SOCIO-ECONOMIC INFORMATION

EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Galicia	6.3	15.7	7.2	70.8
Spain	4.1	13.9	6.0	76.0

GVA SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Galicia	4.6	17.5	6.2	62.5
Spain	2.3	15.5	5.0	68.0

UNEMPLOYMENT RATE						
2007	2010	2011	2012	2013	2014	2015
7.6	15.3	17.3	20.5	22.0	21.7	19.3
Average in Spain in 2015: 22.1						

GROSS DISPOSABLE HOUSEHOLD INCOME (2013)			
SCOPE	€/inhab.	Spain=100	2012-2013 Change (%)
Galicia	12,885	91.6	-0.6
Spain	14,059	100.0	-0.5

Source: INE (for all variables). Note: percentages may not add up to 100 per cent due to being rounded to one decimal place

ENVIRONMENTAL INFORMATION

LAND

LAND DISTRIBUTION IN % (2013)					
Scope	Water	Artificial	Agriculture	Forests and semi-wild areas	Wetlands
Galicia	0.7	2.8	27.8	68.7	0.1
Spain	0.8	2.5	41.9	54.6	0.2
Source: MAGRAMA					

No. OF POLLUTED SITES UP TO 2015		
Scope	Declared	Decontaminated/ Recovered
Galicia	0	109
Source: General Secretariat for Environmental Assessment and Quality. Regional Ministry of the Environment and Land Planning		

NATURE

PROTECTED NATURAL AREAS (2015)		
Protected Natural Areas		
Number	Surface area (ha)	Visits
101	398,995	848,415
Source: Data provided by the RFP		

WILDLIFE: SPECIES INCLUDED IN THE CATALOGUE AND EXOTIC INVASIVE SPECIES (2015)			
No. of species included in the Regional Catalogue of Threatened Species		Spanish Catalogue of Exotic Invasive Species. No. of species included in the Catalogue of TS	
Fauna	Flora	Fauna	Flora
87	113	84 species + 8 genera + 1 family	48 species + 5 genera
Source: Catalogue of Threatened Species of Galicia and Spanish Catalogue of Exotic Invasive Species			

FOREST FIRES							
Year / Period	No. of events		Forest area (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous*
	Incipient fires (<1ha)	Fires (>1ha)		Wooded area	Scrubland and pastures	Total woody area	Total herbaceous area
2015	2,142	740	11,802.2	4,490.7	7,311.5	11,802.2	0.0
*No differentiation between herbaceous and woody treeless areas Source: MAGRAMA							

WASTE

WASTE PER INHABITANT (kg/inhab.)					
Year	Household / municipal waste	Hazardous waste	Selective collection of paper / cardboard	Selective collection of glass	Selective collection of packaging
2010	423.8	64.2	16.6	14.0	7.9
2015	398.0	No data	11.9	14.5	8.1

Data on hazardous waste was obtained from information corresponding to annual reports of hazardous waste managers and the chronological records of registered producers
Source: Follow-up Report to the Programme for Urban Waste Management in Galicia 2010-2020

WATER

AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day)							
Scope	2005	2010	2011	2012	2013	2005-2013 Change (%)	2012-2013 Change (%)
Galicia	154	131	132	132	119	-22.7	-9.8
Spain	168	142	140	135	130	-22.6	-3.7

Source: INE

AIR

AIR QUALITY IN RELATION TO THE PROTECTION OF HUMAN HEALTH					
NO_2: average annual concentration in urban areas (µg/m³). Year 2014					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
73.7	26.3	0.0	0.0	0.0	38
PM10: average annual concentration in urban areas (µg/m³). Year 2014					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
26.5	55.9	14.7	2.9	0.0	34
PM2.5: average annual concentration in urban areas (µg/m³). Year 2014					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2014
0.0	78.6	21.4	0.0	0.0	14
O_3: maximum daily levels of eight-hour running average (µg/m³). Year 2014					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2014
20.8	79.2	0.0			24

Note: LET= Lower Evaluation Threshold; UET= Upper Evaluation Threshold; ALV= Annual Limit Value; LTT= Long Term Target; TV= Target Value.
Source: MAGRAMA

ENERGY

ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab,)							
Scope	2010	2011	2012	2013	2014	2015	2010-2015 Change (%)
Galicia	7.148	7.097	7.065	7.184	7.185	7.179	0.4
Spain	5.863	5.735	5.652	5.540	5.519	5.639	-3.8

Source: data compiled by the authors from the REE and INE data

BUSINESS RESPONSE AND SOCIAL PARTICIPATION

GREEN ECONOMY		
Green Jobs		Organic Labelling
Year	No. of Jobs	No. of labelled products in 2015
	No data	5 products + 1 in the hotel sector

Source: General Secretariat for Environmental Assessment and Quality. Regional Ministry of Environment and Land Planning

CITIZENS ADVICE BUREAU: RESPONSE TO INFORMATION REQUESTS			
Requests for information in 2015			
Total number	Answered within a term of < 1 month	Answered within a term of > 1 month	Unanswered
3,021	2,891	110	20

Source: General Secretariat for Environmental Assessment and Quality. Regional Ministry of Environment and Land Planning

ENVIRONMENTAL REPORTS

- Annual Air Quality Report in Galicia (2014):
  http://siam.cmati.xunta.es/portada
- Environmental Noise 2014:
  http://www.meteogalicia.es/web/index.action

LINKS TO THE AUTONOMOUS COMMUNITY'S ENVIRONMENTAL WEBSITES OF INTEREST

- Regional Ministry of Environment and Land Planning:
  http://www.xunta.gal/medio-ambiente-e-ordenacion-do-territorio
- Environmental Information System of Galicia (SIAM):
  http://siam.cmati.xunta.es/
- Environmental Society of Galicia (SOGAMA):
  http://www.sogama.es/gl
- Waste Information System of Galicia (SIRGa):
  http://sirga.cmati.xunta.es/

LA RIOJA

GEOGRAPHIC AND ADMINISTRATIVE INFORMATION

Statute of Autonomy: Organic Law 3/1982, of 9 June, on the Statute of Autonomy of La Rioja
Area (INE): 5,045 km²
Capital: Logroño **Provinces:** 1 **Municipalities:** 174
Population (2015): 317,053 inhab.
Population density (2015): 62,8 inhab./km²
Change in No. of inhabitants (%) 2000-2015: 20.0 / **2014-2015:** -0.6

SOCIO-ECONOMIC INFORMATION

EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
La Rioja	6.2	25.9	5.9	62.1
Spain	4.1	13.9	6.0	76.0

GVA SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
La Rioja	4.9	27.4	5.2	53.4
Spain	2.3	15.5	5.0	68.0

UNEMPLOYMENT RATE						
2007	2010	2011	2012	2013	2014	2015
5.8	14.2	17.2	20.6	20.0	18.2	15.4
Average in Spain in 2015: 22.1						

GROSS DISPOSABLE HOUSEHOLD INCOME (2013)			
SCOPE	€/inhab.	Spain=100	2012-2013 Change (%)
La Rioja	14,644	104.2	0.3
Spain	14,059	100.0	-0.5

Source: INE (for all variables). Note: percentages may not add up to 100 per cent due to being rounded to one decimal place

ENVIRONMENTAL INFORMATION

LAND

LAND DISTRIBUTION IN % (2013)					
Scope	Water	Artificial	Agriculture	Forests and semi-wild areas	Wetlands
La Rioja	0.5	2.4	35.5	61.7	0.0
Spain	0.8	2.5	41.9	54.6	0.2
Source: MAGRAMA					

No. OF POLLUTED SITES UP TO 2015		
Scope	Declared	Decontaminated/ Recovered
La Rioja	0	0
Source: Regional Ministry of Agriculture, Livestock Farming and the Environment		

NATURE

PROTECTED NATURAL AREAS (2015)		
Protected Natural Areas		
Number	Surface area (ha)	Visits
11	261,202	28,162
Source: Regional Ministry of Agriculture, Livestock Farming and the Environment		

WILDLIFE: SPECIES INCLUDED IN THE CATALOGUE AND EXOTIC INVASIVE SPECIES (2015)			
No. of species included in the Regional Catalogue of Threatened Species		Spanish Catalogue of Exotic Invasive Species. No. of species included in the Catalogue of TS	
Fauna	Flora	Fauna	Flora
6	3	16	5
Source: Regional Ministry of Agriculture, Livestock Farming and the Environment			

FOREST FIRES							
Year / Period	No. of events		Forest area (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous*
	Incipient fires (<1ha)	Fires (>1ha)		Wooded area	Scrubland and pastures	Total woody area	Total herbaceous area
2015	38	20	281.7	25.0	256.8	281.7	0.0
Annual average 10-year period 2005-2014	71	21	129.1	16.5	112.9	129.1	0.0

*No differentiation between herbaceous and woody treeless areas
Source: 2015 Data: MAGRAMA. Data corresponding to annual 10-year period average: Regional Ministry of Agriculture, Livestock Farming and the Environment

WASTE

WASTE PER INHABITANT (kg/inhab.)					
Year	Household / municipal waste	Hazardous waste	Selective collection of paper / cardboard	Selective collection of glass	Selective collection of packaging
2010	406.0	39.1	28.5	20.2	14.1
2015	392.1	29.4	24.0	23.8	14.2

Source: Regional Ministry of Agriculture, Livestock Farming and the Environment

WATER

AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day)							
Scope	2005	2010	2011	2012	2013	2005-2013 Change (%)	2012-2013 Change (%)
La Rioja	145	119	120	130	112	-22.8	-13.8
Spain	168	142	140	135	130	-22.6	-3.7

Source: INE

AIR

AIR QUALITY IN RELATION TO THE PROTECTION OF HUMAN HEALTH					
NO_2: average annual concentration in urban areas (µg/m³). Year 2014					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
100.0	0.0	0.0	0.0	0.0	5
PM10: average annual concentration in urban areas (µg/m³). Year 2014					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
0.0	40.0	60.0	0.0	0.0	5
PM2,5: average annual concentration in urban areas (µg/m³). Year 2014					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2014
0.0	80.0	20.0	0.0	0.0	5
O_3: maximum daily levels of eight-hour running average (µg/m³). Year 2014					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2014
40.0	60.0	0.0			5

Note: LET= Lower Evaluation Threshold; UET= Upper Evaluation Threshold; ALV= Annual Limit Value; LTT= Long Term Target; TV= Target Value.
Source: MAGRAMA

ENERGY

ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab,)							
Scope	2010	2011	2012	2013	2014	2015	2010-2015 Change (%)
La Rioja	5.550	5.412	5.355	5.292	5.299	5.406	-2.6
Spain	5.863	5.735	5.652	5.540	5.519	5.639	-3.8

Source: data compiled by the authors from the REE and INE data

BUSINESS RESPONSE AND SOCIAL PARTICIPATION

GREEN ECONOMY		
Green Jobs		Organic Labelling
Year	No. of Jobs	No. of labelled products in 2015
	No data	6

Source: Regional Ministry of Agriculture, Livestock Farming and the Environment

CITIZENS ADVICE BUREAU: RESPONSE TO INFORMATION REQUESTS			
Requests for information in 2015			
Total number	Answered within a term of < 1 month	Answered within a term of > 1 month	Unanswered
315	308	7	0

Source: Regional Ministry of Agriculture, Livestock Farming and the Environment

LINKS TO THE AUTONOMOUS COMMUNITY'S ENVIRONMENTAL WEBSITES OF INTEREST

- http://www.larioja.org/medio-ambiente/es

MADRID

GEOGRAPHIC AND ADMINISTRATIVE INFORMATION

Statute of Autonomy: Organic Law 3/1983, of 25 February, on the Statute of Autonomy of Madrid
Area (INE): 8,028 km²
Capital: Madrid **Provinces:** 1 **Municipalities:** 179
Population (2015): 6,436,996 inhab.
Population density (2015): 801.8 inhab./km²
Change in No. of inhabitants (%) 2000-2015: 23.7 / **2014-2015:** -0.3

SOCIO-ECONOMIC INFORMATION

EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Madrid	0.2	9.1	5.5	85.2
Spain	4.1	13.9	6.0	76.0

GVA SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Madrid	0.1	9.7	4.0	77.1
Spain	2.3	15.5	5.0	68.0

UNEMPLOYMENT RATE						
2007	2010	2011	2012	2013	2014	2015
6.2	15.8	16.3	18.5	19.8	18.7	17.1
Average in Spain in 2015: 22.1						

GROSS DISPOSABLE HOUSEHOLD INCOME (2013)			
SCOPE	€/inhab.	Spain=100	2012-2013 Change (%)
Madrid	17,548	124.8	-0.5
Spain	14,059	100.0	-0.5

Source: INE (for all variables). Note: percentages may not add up to 100 per cent due to being rounded to one decimal place

ENVIRONMENTAL INFORMATION

LAND

LAND DISTRIBUTION IN % (2013)					
Scope	Water	Artificial	Agriculture	Forests and semi-wild areas	Wetlands
Madrid	0.9	16.4	28.0	54.6	0.0
Spain	0.8	2.5	41.9	54.6	0.2
Source: MAGRAMA					

No. OF POLLUTED SITES UP TO 2015		
Scope	Declared	Decontaminated/ Recovered
Madrid	30	26
Source: Department of Waste Management and Planning. Regional Ministry of the Environment, Local Administration and Land Planning		

NATURE

PROTECTED NATURAL AREAS (2015)		
Protected Natural Areas		
Number	Surface area (ha)	Visits
PNAs: 9 N2000N: 14	PNAs: 120,964 N2000N: 319,663	6,813,732
Source: Prepared by the Department of Environmental Information with data from the Directorate General of the Environment. Regional Ministry of the Environment, Local Administration and Land Planning Visit data estimated from counts in certain areas of the National Park and the 3 Regional Parks declared in the Autonomous Community of Madrid		

WILDLIFE: SPECIES INCLUDED IN THE CATALOGUE AND EXOTIC INVASIVE SPECIES (2015)			
No. of species included in the Regional Catalogue of Threatened Species		Spanish Catalogue of Exotic Invasive Species. No. of species included in the Catalogue of TS	
Fauna	Flora	Fauna	Flora
133	95 (not including 283 Singular Trees)	16	6
Source: Regional Catalogue of Threatened Wild Species of the Autonomous Community of Madrid (Decree 18/1992, of 26 March) and Conservation Area for Flora and Fauna (data on invasive species). Regional Ministry of the Environment, Local Administration and Land Planning			

FOREST FIRES						
Year / Period	No. of events		Forest area (ha)			
			Total (Woody + herbaceous area)	Woody		Herbaceous
	Incipient fires (<1ha)	Fires (>1ha)		Wooded area	Scrubland and pastures	Total woody area	Total herbaceous area
2015	263	73	586.0	46.5	70.0	116.5	469.6
Annual average 10-year period 2005-2014	230	66	759.8	122.6	234.3	357.0	402.8
Source: 2015 Data: MAGRAMA. Data corresponding to annual 10-year period average							

WASTE

WASTE PER INHABITANT (kg/inhab.)					
Year	Household / municipal waste	Hazardous waste	Selective collection of paper / cardboard	Selective collection of glass	Selective collection of packaging
2010	484.1	27.3	23.4	12.7	21.5
2015	411.8 (2014)	23.2 (2014)	13.0 (2014)	12.1	19.2 (2014)

Source: Institute of Statistics of the Autonomous Community of Madrid (data no. inhabitants), Directorate General of the Environment. Regional Ministry of the Environment, Local Administration and Land Planning (data corresponding to the total amount of waste) and Ecovidrio (data on glass)

WATER

AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day)							
Scope	2005	2010	2011	2012	2013	2005-2013 Change (%)	2012-2013 Change (%)
Madrid	160	139	140	135	131	-18.1	-3.0
Spain	168	142	140	135	130	-22.6	-3.7

Source: INE

AIR

AIR QUALITY IN RELATION TO THE PROTECTION OF HUMAN HEALTH					
NO_2: average annual concentration in urban areas (µg/m³). Year 2014					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
14.9	23.4	19.1	29.8	12.8	47
PM10: average annual concentration in urban areas (µg/m³). Year 2014					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
0.0	54.3	45.7	0.0	0.0	35
PM2.5: average annual concentration in urban areas (µg/m³). Year 2014					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2014
10.5	78.9	10.5	0.0	0.0	19
O_3: maximum daily levels of eight-hour running average (µg/m³). Year 2014					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2014
0.0	54.1	45.9			37

Note: LET= Lower Evaluation Threshold; UET= Upper Evaluation Threshold; ALV= Annual Limit Value; LTT= Long Term Target; TV= Target Value.
Source: MAGRAMA

ENERGY

ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab,)							
Scope	2010	2011	2012	2013	2014	2015	2010-2015 Change (%)
Madrid	5.072	4.862	4.771	4.574	4.407	4.481	-11.7
Spain	5.863	5.735	5.652	5.540	5.519	5.639	-3.8

Source: data compiled by the authors from the REE and INE data

BUSINESS RESPONSE AND SOCIAL PARTICIPATION

GREEN ECONOMY		
Green Jobs		Organic Labelling
Year	No. of Jobs	No. of labelled products in 2015
2015	17,247	76

Green Jobs: no. contracts in the following sectors: 1) Agriculture, Livestock Farming, Forestry and Fisheries and 2) Water Supply, Sanitation, Waste and Decontamination
Source: Statistics of the Labour Market. Employment Website of the Autonomous Community of Madrid. Regional Ministry of the Economy, Employment and Finance
Organic Labelling: data calculated according to the new standards of the CB Forum.
Source: Department of the Integrated Control of Pollution. Regional Ministry of the Environment, Local Administration and Land Planning

CITIZENS ADVICE BUREAU: RESPONSE TO INFORMATION REQUESTS			
Requests for information in 2015			
Total number	Answered within a term of < 1 month	Answered within a term of > 1 month	Unanswered
17,256	17,254	2	0

Source: Department of Environmental Information and Documentation. Regional Ministry of the Environment, Local Administration and Land Planning

ENVIRONMENTAL REPORTS

- Situation Report "2015 Environmental Diagnosis of the Autonomous Community of Madrid" (http://www.madrid.org/bvirtual/BVCM003496.pdf)

LINKS TO THE AUTONOMOUS COMMUNITY'S ENVIRONMENTAL WEBSITES OF INTEREST

- http://www.madrid.org
- http://madrid.org/legislacionambiental
- http://www.madrid.org/calidaddelaire
- http://www.madrid.org/cartografia_ambiental
- http://www.viaspecuariasdemadrid.org/

RELEVANT DATA OR INFORMATION

- Amendment of category Singular Trees in the Regional Catalogue of Threatened Wild Species from 257 to 283 specimens (Order 68/2015, of 20 January)
- Implementation of the inter-regional hunting and fishing licence, by virtue of an agreement between the Ministry of Agriculture, Food and the Environment and the Regional Governments of Aragón, Asturias, Castilla y León, Autonomous Community of C. Valenciana, Galicia, Extremadura and Madrid.
- Publication of environmental assessment resolutions and documents and Integrated Environmental Authorisation in the Compendium of Environmental Laws (RLMA) of the Autonomous Community of Madrid
- Incentivos Autotaxi Madrid incentive plan, fostering the progressive replacement of taxis in the Autonomous Community of Madrid with low NO_x and CO_2 emission models: 618 beneficiaries, total value of subsidies granted: € 993,000.
- 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_x and CO_2 emission models: 139 beneficiaries, total value of subsidies granted: € 675,000.
- Publication of the Geographic Information within the framework of the Spatial Data Infrastructure of the Autonomous Community of Madrid (IDEM). It includes meta data, downloads and viewing WMS services and it is subject to continuous evaluation. The Regional Ministry of the Environment, Local Administration and Land Planning has incorporated the relevant environmental contents corresponding to its competencies.
- Commemoration of the 10th Anniversary of the Declaration of the Biosphere Reserve of Sierra del Rincón.
- Creation of the Transparency Website of the Autonomous Community of Madrid, including institutional, legal, financial and environmental data, among others. Available at http://www.madrid.org/transparencia

MELILLA

GEOGRAPHIC AND ADMINISTRATIVE INFORMATION

Statute of Autonomy: Organic Law 2/1995, of 13 March, on the Statute of Autonomy of Melilla
Area (INE): 12 km²
Average coastline length: 7.3 km (0.1% of the Spanish total)
Capital: Melilla **Provinces:** 1 **Municipalities:** 1
Population (2015): 85,584 inhab.
Population density (2015): 7,132.0 inhab./km²
Change in No. of inhabitants (%) 2000-2015: 29.2 / **2014-2015:** 1.3

SOCIO-ECONOMIC INFORMATION

EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Melilla	0.0	2.8	1.9	95.3
Spain	4.1	13.9	6.0	76.0

GVA SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Melilla	0.1	4.9	4.2	81.6
Spain	2.3	15.5	5.0	68.0

UNEMPLOYMENT RATE						
2007	2010	2011	2012	2013	2014	2015
18.2	22.8	22.4	26.9	32.5	28.4	34.0
Average in Spain in 2015: 22.1						

GROSS DISPOSABLE HOUSEHOLD INCOME (2013)			
SCOPE	€/inhab.	Spain=100	2012-2013 Change (%)
Melilla	10,802	76.8	-0.2
Spain	14,059	100.0	-0.5

Source: INE (for all variables). Note: percentages may not add up to 100 per cent due to being rounded to one decimal place

ENVIRONMENTAL INFORMATION

NATURE

PROTECTED AREAS (2015)				
Total protected land area (ha)	Protected Natural Areas (ha)	Natura 2000 Network (ha)	Biosphere Reserves (ha)	RAMSAR Wetlands (ha)
46.1	0.0	46.1	0.0	0.0
Source: MAGRAMA				

FOREST FIRES							
Year / Period	No. of events		Forest area (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (<1ha)	Fires (>1ha)		Wooded area	Scrubland and pastures	Total woody area	Total herbaceous area
2015	0	0	0.0	0.0	0.0	0.0	0.0
Source: MAGRAMA							

WATER

AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day)							
Scope	2005	2010	2011	2012	2013	2005-2013 Change (%)	2012-2013 Change (%)
Melilla and Ceuta	141	151	156	109	106	-24.8	-2.8
Spain	168	142	140	135	130	-22.6	-3.7

Joint information for Melilla and Ceuta. Source: INE

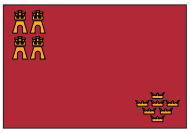
ENERGY

ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab,)							
Scope	2010	2011	2012	2013	2014	2015	2010-2015 Change (%)
Melilla	2.806	2.739	2.690	2.506	2.483	2.494	-11.1
Spain	5.863	5.735	5.652	5.540	5.519	5.639	-3.8

Source: data compiled by the authors from the REE and INE data

LINKS TO THE AUTONOMOUS COMMUNITY'S ENVIRONMENTAL WEBSITES OF INTEREST

- http://www.melillamedioambiente.com/
- http://www.remesa.es/



MURCIA

GEOGRAPHIC AND ADMINISTRATIVE INFORMATION

Statute of Autonomy: Organic Law 4/1982, of 9 June, on the Statute of Autonomy of the Region of Murcia
Area (INE): 11.314 km2
Average coastline length: 271,6 km (2.6% of the total)
Capital: Murcia **Provinces:** 1 **Municipalities:** 45
Population (2015): 1.467.288 inhab.
Population density (2015): 129,7 inhab./km2
Change in No. of inhabitants (%) 2000-2015: 27,7 / **2014-2015:** 0,0

SOCIO-ECONOMIC INFORMATION

EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Murcia	12.8	12.8	5.3	69.2
Spain	4.1	13.9	6.0	76.0

GVA SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Murcia	4.3	16.4	5.4	64.7
Spain	2.3	15.5	5.0	68.0

UNEMPLOYMENT RATE						
2007	2010	2011	2012	2013	2014	2015
7.5	22.9	25.0	27.6	29.0	26.6	24.6
Average in Spain in 2015: 22.1						

GROSS DISPOSABLE HOUSEHOLD INCOME (2013)			
SCOPE	€/inhab.	Spain=100	2012-2013 Change (%)
Murcia	17,548	124.8	-0.5
Spain	14,059	100.0	-0.5

Source: INE (for all variables). Note: percentages may not add up to 100 per cent due to being rounded to one decimal place

ENVIRONMENTAL INFORMATION

LAND

LAND DISTRIBUTION IN % (2013)					
Scope	Water	Artificial	Agriculture	Forests and semi-wild areas	Wetlands
Murcia	0.3	5.1	49.4	45.1	0.1
Spain	0.8	2.5	41.9	54.6	0.2
Source: MAGRAMA					

NATURE

PROTECTED AREAS (2015)				
Total protected land area (ha)	Protected Natural Areas (ha)	Natura 2000 Network (ha)	Biosphere Reserves (ha)	RAMSAR Wetlands (ha)
276,374.6	6,1523,1	266,747.6	0.0	1,686.2
Source: MAGRAMA				

FOREST FIRES						
Year / Period	No. of events		Forest area (ha)			
			Total (Woody + herbaceous area)	Woody		Herbaceous
	Incipient fires (<1ha)	Fires (>1ha)		Wooded area	Scrubland and pastures	Total woody area	Total herbaceous area
2015	106	21	648.5	599.0	38.9	638.0	10.5
Source: MAGRAMA							

WASTE

HOUSEHOLD WASTE COLLECTED PER INHABITANT (kg/inhab.)			
2010	2011	2012	2013
499.5	396.6	398.9	417.6

Source: INE

WATER

AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day)							
Scope	2005	2010	2011	2012	2013	2005-2013 Change (%)	2012-2013 Change (%)
Murcia	162	159	152	145	124	-23.5	-14.5
Spain	168	142	140	135	130	-22.6	-3.7

Source: INE

AIR

AIR QUALITY IN RELATION TO THE PROTECTION OF HUMAN HEALTH					
NO_2: average annual concentration in urban areas (µg/m³). Year 2014					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
12.5	62.5	12.5	0.0	12.5	8
PM10: average annual concentration in urban areas (µg/m³). Year 2014					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
0.0	12.5	62.5	25.0	0.0	8
PM2,5: average annual concentration in urban areas (µg/m³). Year 2014					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2014
0.0	100.0	0.0	0.0	0.0	1
O_3: maximum daily levels of eight-hour running average (µg/m³). Year 2014					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2014
14.3	42.9	42.9			7

Note: LET= Lower Evaluation Threshold; UET= Upper Evaluation Threshold; ALV= Annual Limit Value; LTT= Long Term Target; TV= Target Value.
Source: MAGRAMA

ENERGY

ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab,)							
Scope	2010	2011	2012	2013	2014	2015	2010-2015 Change (%)
Murcia	5.697	5.663	5.838	5.648	5.773	6.069	6.5
Spain	5.863	5.735	5.652	5.540	5.519	5.639	-3.8

Source: data compiled by the authors from the REE and INE data

LINKS TO THE AUTONOMOUS COMMUNITY'S ENVIRONMENTAL WEBSITES OF INTEREST

- http://sinqlair.carm.es/calidadaire/
- http://transparencia.carm.es/consejeria-de-agricultura
- http://transparencia.carm.es/web/transparencia/transparencia-en-materia-de-medio-ambiente

NAVARRE

GEOGRAPHIC AND ADMINISTRATIVE INFORMATION

Statute of Autonomy: Organic Act 13/82, of 10 August, on the reintegration and improvement of the Navarre Legal System
Area (INE): 10,391 km²
Capital: Pamplona **Provinces:** 1 **Municipalities:** 272
Population (2015): 640,476 inhab.
Population density (2015): 61.6 inhab./km²
Change in No. of inhabitants (%) 2000-2015: 17.8 / **2014-2015:** 0.0

SOCIO-ECONOMIC INFORMATION

EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Navarre	3.6	24.4	6.4	65.6
Spain	4.1	13.9	6.0	76.0

GVA SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Navarre	2.9	28.6	4.8	54.5
Spain	2.3	15.5	5.0	68.0

UNEMPLOYMENT RATE						
2007	2010	2011	2012	2013	2014	2015
4.7	11.9	13.0	16.2	17.9	15.7	13.8
Average in Spain in 2015: 22.1						

GROSS DISPOSABLE HOUSEHOLD INCOME (2013)			
SCOPE	€/inhab.	Spain=100	2012-2013 Change (%)
Navarre	17,354	123.4	-0.9
Spain	14,059	100.0	-0.5

Source: INE (for all variables). Note: percentages may not add up to 100 per cent due to being rounded to one decimal place

ENVIRONMENTAL INFORMATION

LAND

LAND DISTRIBUTION IN % (2013)					
Scope	Water	Artificial	Agriculture	Forests and semi-wild areas	Wetlands
Navarre	0.5	2.6	39.7	57.2	0.0
Spain	0.8	2.5	41.9	54.6	0.2
Source: MAGRAMA					

No. OF POLLUTED SITES UP TO 2015		
Scope	Declared	Decontaminated/ Recovered
Navarre	1	11
Source: Government of Navarre		

NATURE

PROTECTED NATURAL AREAS (2015)		
Protected Natural Areas		
Number	Surface area (ha)	Visits
78	85.318	124.540
Source: Government of Navarre		

WILDLIFE: SPECIES INCLUDED IN THE CATALOGUE AND EXOTIC INVASIVE SPECIES (2015)			
No. of species included in the Regional Catalogue of Threatened Species		Spanish Catalogue of Exotic Invasive Species. No. of species included in the Catalogue of TS	
Fauna	Flora	Fauna	Flora
115	53	27	13
Source: Government of Navarre			

FOREST FIRES							
Year / Period	No. of events		Forest area (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (<1ha)	Fires (>1ha)		Wooded area	Scrubland and pastures	Total woody area	Total herbaceous area
2015	343	101	1,003.8	434.8	290.9	725.7	278.2
Annual average 10-year period 2005-2014	445	122	1,169.6	334.1	681.5	1,015.6	154.0
Source: 2015 Data: MAGRAMA. Data corresponding to annual 10-year period average: Government of Navarre							

WASTE

WASTE PER INHABITANT (kg/inhab.)					
Year	Household / municipal waste	Hazardous waste	Selective collection of paper / cardboard	Selective collection of glass	Selective collection of packaging
2010	441	59.9	39.5	25.2	19.9
2015	411 (2014)	51.4 (2014)	34.5 (2014)	25.9 (2014)	12.0 (2014)

Source: Government of Navarre

WATER

AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day)							
Scope	2005	2010	2011	2012	2013	2005-2013 Change (%)	2012-2013 Change (%)
Navarre	135	125	132	126	112	-17.0	-11.1
Spain	168	142	140	135	130	-22.6	-3.7

Source: INE

AIR

AIR QUALITY IN RELATION TO THE PROTECTION OF HUMAN HEALTH					
NO_2: average annual concentration in urban areas (µg/m³). Year 2014					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
57.1	28.6	14.3	0.0	0.0	7
PM10: average annual concentration in urban areas (µg/m³). Year 2014					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
0.0	100.0	0.0	0.0	0.0	7
PM2,5: average annual concentration in urban areas (µg/m³). Year 2014					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2014
0.0	66.7	33.3	0.0	0.0	3
O_3: maximum daily levels of eight-hour running average (µg/m³). Year 2014					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2014
14.3	57.1	28.6			7

Note: LET= Lower Evaluation Threshold; UET= Upper Evaluation Threshold; ALV= Annual Limit Value; LTT= Long Term Target; TV= Target Value.
Source: MAGRAMA

ENERGY

ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab,)							
Scope	2010	2011	2012	2013	2014	2015	2010-2015 Change (%)
Navarre	7.720	7.704	7.445	7.411	7.460	7.549	-2.2
Spain	5.863	5.735	5.652	5.540	5.519	5.639	-3.8

Source: data compiled by the authors from the REE and INE data

BUSINESS RESPONSE AND SOCIAL PARTICIPATION

GREEN ECONOMY		
Green Jobs		Organic Labelling
Year	No. of Jobs	No. of labelled products in 2015
	1,261	9

The estimate of green jobs includes the following activities: water sanitation, waste management and decontamination; water collection, purification and distribution; waste water collection; waste collection, treatment and disposal; recovery; other waste management related services. Such are the activities proposed for the preparation of the indicator "Green Jobs: a limited approximation" by the MAGRAMA
Source: Government of Navarre

CITIZENS ADVICE BUREAU: RESPONSE TO INFORMATION REQUESTS			
Requests for information in 2015			
Total number	Answered within a term of < 1 month	Answered within a term of > 1 month	Unanswered
205	195	3	7

Source: Government of Navarre

ENVIRONMENTAL REPORTS

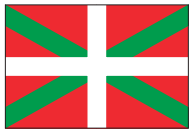
- Report on the Status of the Environment
- Natural Environment Journal of Navarre
- Journal on Waste
- Journal on the environmental volunteering in rivers and Environmental Education Guides
- Natura 2000 Network Collectable

LINKS TO THE AUTONOMOUS COMMUNITY'S ENVIRONMENTAL WEBSITES OF INTEREST

- https://www.navarra.es/home_es/Gobierno+de+Navarre/Departamento+Desarrollo+Rural+Medio+Ambiente+Administracion+Local/
- https://www.navarra.es/home_es/Temas/Medio+Ambiente/

RELEVANT DATA OR INFORMATION

- The analysis of samples points for the physical and chemical quality of surface water shows that more than 90% of sample points present very good conditions.
- The target value regarding ozone (maximum concentration of 120 µg/m³ must not be exceeded more than 25 days per calendar year within a 3-year period) is met in three out of the four areas under analysis (Pamplona, Mountain Region and Central Region) but not in the La Ribera Region
- The Autonomous Community of Navarre has protected 30% of its area by means of some protection scheme (natural parks, natural reserves, integral reserves, recreational natural areas, protected areas, special areas of conservation).
- Navarre shows low defoliation levels (< 25%) since 2006. In 2014 it was 18.25%.
- Greenhouse Gas Emissions reduced by 20% from 2007 to 2013.
- Navarre gets 80% of its energy supply from renewable sources.
- Household and commercial waste reduced by more than 10% from 2005 to 2014.
- Almost 90% of the population in Navarre is undergoing Local Agenda 21 related processes.



BASQUE COUNTRY

GEOGRAPHIC AND ADMINISTRATIVE INFORMATION

Statute of Autonomy: Organic Law 3/1979, of 18 December, on the Statute of Autonomy of the Basque Country
Area (INE): 7,234 km²
Average coastline length: 500.7 km (4.9% of the Spanish total)
Capital: Vitoria **Provinces:** 3 **Municipalities:** 251
Population (2015): 2,189,257 inhab.
Population density (2015): 302.6 inhab./km²
Change in No. of inhabitants (%) 2000-2015: 4.3 / **2014-2015:** 2.0

SOCIO-ECONOMIC INFORMATION

EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Basque Country	1.3	20.9	5.5	72.3
Spain	4.1	13.9	6.0	76.0

GVA SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
Basque Country	0.6	24.4	5.6	60.2
Spain	2.3	15.5	5.0	68.0

UNEMPLOYMENT RATE						
2007	2010	2011	2012	2013	2014	2015
6.2	10.7	12.4	15.6	16.6	16.3	14.8
Average in Spain in 2015: 22.1						

GROSS DISPOSABLE HOUSEHOLD INCOME (2013)			
SCOPE	€/inhab.	Spain=100	2012-2013 Change (%)
Basque Country	18,626	132.5	-0.2
Spain	14,059	100.0	-0.5

Source: INE (for all variables). Note: percentages may not add up to 100 per cent due to being rounded to one decimal place

ENVIRONMENTAL INFORMATION

LAND

LAND DISTRIBUTION IN % (2013)					
Scope	Water	Artificial	Agriculture	Forests and semi-wild areas	Wetlands
Basque Country	0.7	6.4	24.9	68.0	0.1
Spain	0.8	2.5	41.9	54.6	0.2
Source: MAGRAMA					

NATURE

PROTECTED NATURAL AREAS (2015)		
Protected Natural Areas		
Number	Surface area (ha)	Visits
41	83,650	No data
Source: Data provided by the RFP		

WILDLIFE: SPECIES INCLUDED IN THE CATALOGUE AND EXOTIC INVASIVE SPECIES (2015)			
No. of species included in the Regional Catalogue of Threatened Species		Spanish Catalogue of Exotic Invasive Species. No. of species included in the Catalogue of TS	
Fauna	Flora	Fauna	Flora
160	218	28	23
Source: Data provided by the RFP			

FOREST FIRES							
Year / Period	No. of events		Forest area (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (<1ha)	Fires (>1ha)		Wooded area	Scrubland and pastures	Total woody area	Total herbaceous area
2015	86	40	576.8	309.2	239.3	548.5	28.3
Source: MAGRAMA							

WASTE

WASTE PER INHABITANT (kg/inhab.)					
Year	Household / municipal waste	Hazardous waste	Selective collection of paper / cardboard	Selective collection of glass	Selective collection of packaging
2010	493 (kg/inhab.)	353,640.5 t	169,757.5 t	54074.5 t	30,631.0 t
2015	498 kg/inhab. (2013)	306,316.2 t (2014)	130,614.4 t (2013)	54,402.3 t (2013)	33,839.6 t (2013)

Source: Government of the Basque Country Department of the Environment and Territorial Policy. Directorate for Environmental Administration
Urban Waste: http://www.euskadi.eus/web01-s2ing/es/contenidos/estadistica/residuos_urbanos_ru/es_resid_ru/residuos_urbanos_ru.html
Hazardous Waste: http://www.euskadi.eus/web01-s2ing/es/contenidos/estadistica/amb_res_peligrosos_2014/es_def/index.shtml
Selective Collection: http://www.euskadi.eus/web01-s2ing/es/contenidos/estadistica/residuos_urbanos_ru/es_resid_ru/residuos_urbanos_ru.html

WATER

AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day)							
Scope	2005	2010	2011	2012	2013	2005-2013 Change (%)	2012-2013 Change (%)
Basque Country	140	120	115	116	123	-12.1	6
Spain	168	142	140	135	130	-22.6	-3.7

Source: INE

AIR

AIR QUALITY IN RELATION TO THE PROTECTION OF HUMAN HEALTH					
NO_2: average annual concentration in urban areas (µg/m³). Year 2014					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
18.5	51.9	22.2	7.4	0.0	27
PM10: average annual concentration in urban areas (µg/m³). Year 2014					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
7.7	73.1	19.2	0.0	0.0	26
PM2,5: average annual concentration in urban areas (µg/m³). Year 2014					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2014
9.1	90.9	0.0	0.0	0.0	11
O_3: maximum daily levels of eight-hour running average (µg/m³). Year 2014					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2014
33.3	60.0	6.7			15

Note: LET= Lower Evaluation Threshold; UET= Upper Evaluation Threshold; ALV= Annual Limit Value; LTT= Long Term Target; TV= Target Value.
Source: MAGRAMA

ENERGY

ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab,)							
Scope	2010	2011	2012	2013	2014	2015	2010-2015 Change (%)
Basque Country	8.477	8.101	7.601	7.554	7.671	7.715	-9.0
Spain	5.863	5.735	5.652	5.540	5.519	5.639	-3.8

Source: data compiled by the authors from the REE and INE data

BUSINESS RESPONSE AND SOCIAL PARTICIPATION

GREEN ECONOMY		
Green Jobs		Organic Labelling
Year	No. of Jobs	No. of labelled products in 2015
	No data	No data

Source: data provided by the RFP

CITIZENS ADVICE BUREAU: RESPONSE TO INFORMATION REQUESTS			
Requests for information in 2015			
Total number	Answered within a term of < 1 month	Answered within a term of > 1 month	Unanswered
13,567	13,567	0	0

Source: data provided by the RFP

ENVIRONMENTAL REPORTS

- Environmental Profile: http://www.ingurumena.ejgv.euskadi.eus/r49-5832/es/contenidos/libro/perfil_ambiental/es_doc/indice.html

LINKS TO THE AUTONOMOUS COMMUNITY'S ENVIRONMENTAL WEBSITES OF INTEREST

- Department of the Environment and Territorial Policy of the Basque Country
  http://www.euskadi.eus/gobierno-vasco/departamento-medio-ambiente-politica-territorial/inicio/
- Statistics of the Department of the Environment and Territorial Policy of the Basque Country
  http://www.euskadi.eus/informacion/estadisticas-del-departamento-de-medio-ambiente-y-politica-territorial/web01-s2ing/es/

Environment:

Environmental Quality
- Statistics on air pollution (090203)
- Statistics on the quality of water bodies (090214)

Waste
- Statistics on hazardous waste (090209)
- Statistics on non-hazardous waste (090211)
- Statistics on municipal solid waste (090218)
- Statistics on declaration of packaging (090224)
- Statistic on the declaration of waste of electrical and electronic equipment (090223)

Climate Change
- Inventory of greenhouse gas emissions (090205)

Environmental Accounts
- Statistics on Material Flows (090217)
- Inventory of emissions of pollutants into the atmosphere (090226)

Environmental Indicators
- Environmental Indicators (090207)

Transport
- Statistics on road transport of goods by road (132714)
- Directory of Transport Companies (202723)

- GeoEuskadi, Spatial Data Infrastructure (IDE) of the Basque Country
  http://www.geo.euskadi.eus/

RELEVANT DATA OR INFORMATION

- Plans and Projects of the Department of the Environment and Territorial Policy of the Basque Country.
  http://www.euskadi.eus/gobierno-vasco/planes-proyectos/?r01kQry=tT:plan_programa_proyecto;cA:r01e00000fe4e66771ba470b8e35584d9d7da8391;mA:documentLanguage.EQ.es;pp:r01PageSize.20;p:Inter.Inter_portal&r01SearchEngine=meta

C. VALENCIANA

GEOGRAPHIC AND ADMINISTRATIVE INFORMATION

Statute of Autonomy: Organic Law 1/2006, of 10 April, on the Reform of Organic Law 5/1982, of 1 July, on the Statute of Autonomy of the C. Valenciana
Area (INE): 23,255 km²
Average coastline length: 552 km (5.4% of the Spanish total)
Capital: C. Valenciana **Provinces:** 3 **Municipalities:** 542
Population (2015): 4,980,689 inhab.
Population density (2015): 214.2 inhab./km²
Change in No. of inhabitants (%) 2000-2015: 20.9 / **2014-2015:** -0.5

SOCIO-ECONOMIC INFORMATION

EMPLOYMENT SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
C. Valenciana	3.7	17.5	6.1	72.7
Spain	4.1	13.9	6.0	76.0

GVA SECTOR STRUCTURE (%). YEAR 2015				
SCOPE	Agriculture	Industry	Construction	Services
C. Valenciana	1.9	16.9	5.7	66.3
Spain	2.3	15.5	5.0	68.0

UNEMPLOYMENT RATE						
2007	2010	2011	2012	2013	2014	2015
8.7	22.9	24.0	27.2	28.1	25.8	22.8
Average in Spain in 2015: 22.1						

GROSS DISPOSABLE HOUSEHOLD INCOME (2013)			
SCOPE	€/inhab.	Spain=100	2012-2013 Change (%)
C. Valenciana	12,484	88.8	-0.8
Spain	14,059	100.0	-0.5

Source: INE (for all variables). Note: percentages may not add up to 100 per cent due to being rounded to one decimal place

ENVIRONMENTAL INFORMATION

LAND

LAND DISTRIBUTION IN % (2013)					
Scope	Water	Artificial	Agriculture	Forests and semi-wild areas	Wetlands
C. Valenciana	0.8	5.3	39.4	54.0	0.5
Spain	0.8	2.5	41.9	54.6	0.2
Source: MAGRAMA					

No. OF POLLUTED SITES UP TO 2015		
Scope	Declared	Decontaminated/ Recovered
C. Valenciana	1	0
Source: RFP		

NATURE

PROTECTED AREAS (2015)				
Total protected land area (ha)	Protected Natural Areas (ha)	Natura 2000 Network (ha)	Biosphere Reserves (ha)	RAMSAR Wetlands (ha)
913,755.8	241,583.3	871,795.4	0	31,540.2
Source: MAGRAMA				

WILDLIFE: SPECIES INCLUDED IN THE CATALOGUE AND EXOTIC INVASIVE SPECIES (2015)			
No. of species included in the Regional Catalogue of Threatened Species		Spanish Catalogue of Exotic Invasive Species. No. of species included in the Catalogue of TS	
Fauna	Flora	Fauna	Flora
99	372	21	663
Source: RFP			

FOREST FIRES							
Year / Period	No. of events		Forest area (ha)				
			Total (Woody + herbaceous area)	Woody			Herbaceous
	Incipient fires (<1ha)	Fires (>1ha)		Wooded area	Scrubland and pastures	Total woody area	Total herbaceous area
2015	271	39	2,371.7	567.3	1,748.0	2,315.3	56.4
Source: MAGRAMA							

WASTE

HOUSEHOLD WASTE COLLECTED PER INHABITANT (kg/inhab.)			
2010	2011	2012	2013
386.6	379.2	371.5	368.0

Source: INE

WATER

AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day)							
Scope	2005	2010	2011	2012	2013	2005-2013 Change (%)	2012-2013 Change (%)
C. Valenciana	174	157	152	161	158	-9.2	-1.9
Spain	168	142	140	135	130	-22.6	-3.7

Source: INE

AIR

AIR QUALITY IN RELATION TO THE PROTECTION OF HUMAN HEALTH					
NO_2: average annual concentration in urban areas (µg/m³). Year 2014					
<=13 (<=LET/2)	13-26 (LET/2-LET)	26-32 (LET-UET)	32-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
63.0	25.9	9.3	0.0	1.9	54
PM10: average annual concentration in urban areas (µg/m³). Year 2014					
<=10 (<=LET/2)	10-20 (LET/2-LET)	20-28 (LET-UET)	28-40 (UET-ALV)	>40 (>ALV)	No. of stations 2014
7.8	68.6	23.5	0.0	0.0	51
PM2.5: average annual concentration in urban areas (µg/m³). Year 2014					
<=6 (<=LET/2)	6-12 (LET/2-UET)	12-17 (LET-UET)	17-25 (UET-ALV)	>25 (>ALV)	No. of stations 2014
7.9	76.3	15.8	0.0	0.0	38
O_3: maximum daily levels of eight-hour running average (µg/m³). Year 2014					
<= 120 (<=LTT)	(LTT-TV)	>120 (25 average exceedances 3 years) (>TV)			No. of stations 2014
9.1	70.9	20.0			55

Note: LET= Lower Evaluation Threshold; UET= Upper Evaluation Threshold; ALV= Annual Limit Value; LTT= Long Term Target; TV= Target Value.
Source: MAGRAMA

ENERGY

ENERGY CONSUMPTION PER INHABITANT: ELECTRIC POWER DEMAND PER INHABITANT (MWh/inhab,)							
Scope	2010	2011	2012	2013	2014	2015	2010-2015 Change (%)
C. Valenciana	5.453	5.320	5.162	5.064	5.172	5.378	-1.4
Spain	5.863	5.735	5.652	5.540	5.519	5.639	-3.8

Source: data compiled by the authors from the REE and INE data

BUSINESS RESPONSE AND SOCIAL PARTICIPATION

GREEN ECONOMY		
Green Jobs		Organic Labelling
Year	No. of Jobs	No. of labelled products in 2015
2015	N/D	264

Source: RFP

CITIZENS ADVICE BUREAU: RESPONSE TO INFORMATION REQUESTS			
Requests for information in 2015			
Total number	Answered within a term of < 1 month	Answered within a term of > 1 month	Unanswered
9,653	9,629	24	-

Source: RFP

ENVIRONMENTAL REPORTS

- Territorial Strategy of C. Valenciana

LINKS TO THE AUTONOMOUS COMMUNITY'S ENVIRONMENTAL WEBSITES OF INTEREST

- Regional Ministry of Agriculture, the Environment, Climate Change and Rural Development: http://www.agroambient.gva.es
- Biodiversity Data Bank: http://bdb.cma.gva.es
- Territorial Forest Action Plan of C. Valenciana (PATFOR): http://www.agroambient.gva.es/web/medio-natural/patfor
- Environmental Information and Documentation Centre (CIDAM): http://www.agroambient.gva.es/web/cidam
- Natural Parks: http://www. agroambient.gva.es/web/parques-naturales
- Territorial Strategy of C. Valenciana: http://www.habitatge.gva.es/web/planificacion-territorial-e-infraestructura-verde/estrategia-territorial-de-la-comunitat-valenciana-77496

Geographic and Administrative Information

Area: Spanish National Institute of Statistics. Area of the Autonomous Communities and Provinces by altitude. Annual Report 1994. Chapter 1. Section 1.3. Area and altitude. Available at: http://www.ine.es/inebaseweb/pdfDispacher.do?td=154090&L=0

Population and population by size of municipality: Spanish National Institute of Statistics. Official figures from the review of the Municipal Register as of 1 January. Summary by autonomous community. Population by autonomous cities, communities and gender. Information on the website: INEbase / Demography and population / Register. Population by municipalities / Population of municipalities and population units / Official Population Figures for Spanish Municipalities: Review of the Municipal Register / Population by municipalities, islands, provinces and Autonomous Community. Last data published: Population as of 1 January 2015 (17 December 2015).

(Royal Decree 1079/2015 of 27 November, by which the population figures from the review of the Municipal Register of Inhabitants at 1 January 2015 are declared to be the official figures). Annual population series since 1996.

Numbers by province and municipality: Spanish National Institute of Statistics. 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 (2015): Preparation by the authors through the coefficient between the population in 2015 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, 2014 and 2015.

Coastline length: "2014 Report on the status of Natural Heritage and Biodiversity in Spain". Directorate-General for Environmental Quality and Assessment and Natural Environment. MAGRAMA. Information referred to the Extension of the Public Maritime-Terrestrial Domain. It is different from the one used in previous versions of the (IGN, as per the Spanish acronym).

Socio-Economic Information

Employment Sector Structure (people employed by activity): Spanish National Institute of Statistics. Checked in INEbase / Labour Market / Economic activity, employment and unemployment / Economically Active Population Survey / Annual results / Average corresponding to the four quarters of the year / Results by 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. Checked at INEbase. Labour Market / Economic activity, employment and unemployment / Active Population Survey / Annual results / Average corresponding to the four quarters of the year / Results by autonomous community / 6.42 Unemployment rate by age group, sex and autonomous community

Regional structure of GVA (% in 2015): Spanish National Institute of Statistics. Checked at INEbase. Fiscal accounts Spanish Regional Accounting. 2010 Base / Functional Approach. GDP and its components / Last data published: 2000-2015 Series (30 March 2016)/Detailed results/2010-2015 Accounting series. Tables by autonomous community. 2010-2015 series (collection of information by means of individual enquiry to each autonomous community). Gross Domestic Product at market prices and Gross Value Added at basic prices by branch of activity. Current prices. Chart 3. Percentage structure.

Methodological note: Overall values extracted have been obtained by aggregating 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; ancillary activities, 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.

Percentages estimated are part of the GDP estimate; item "Net taxes on products", which is usually 9.2% of the GDP structure, must be added. Therefore, the GVA represents 90.8% of the total GDP.

Gross disposable household income per capita (2013): Spanish National Institute of Statistics. Checked at INEbase / National accounts / Spanish Regional Accounts / Economic Accounts / Spanish Regional Accounts. Base 2010 / Institutional Approach. Balance of Household Income. Last data published: Series 2010-2013 (23 December 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. Data corresponding to year 2013 have been rounded to one decimal place, so the total might not be exactly 100%.

No. OF POLLUTED SITES UP TO 2015

Data provided by the Regional Focal Point. The table includes the sources, if detailed. It includes information on the number of declared and recovered sites until 2015.

Methodological note: There are autonomous communities in which the number of recovered sites is higher than the number of declared sites. This is due to the option provided in Art. 38 of Act 22/2011, allowing the voluntary recovery of sites without having declared them as polluted by virtue of Art. 34 of said Act.

NATURE

PROTECTED NATURAL AREAS (2015)

Data provided by the Regional Focal Point. The table includes the sources, if detailed. It includes information on the number of protected areas, their corresponding area and the number of visitors registered (in general, they usually refer to visitors to interpretation centres). When said information is not available, it has been replaced by the information on the protected area contained in the Nature Databank of the MAGRAMA.

WILDLIFE: SPECIES INCLUDED IN THE CATALOGUE AND EXOTIC INVASIVE SPECIES (2015)

Data provided by the Regional Focal Point. The table includes the sources, if detailed. It includes information on the number of flora and fauna species included in the Regional Catalogue of Endangered Species and the number of species existing in the Autonomous Communities included in the Spanish Catalogue of Exotic Invasive Species.

FOREST FIRES

Data on fires corresponding to 2015 are obtained from report "Forest Fires in Spain. 1 January – 31 December 2015. Information Preview" (MAGRAMA, 2016). Data corresponding to the average of the 10-year period 2005-2015 have been provided by the RFP (the table shows the source when detailed).

WASTE

WASTE PER INHABITANT (kg/inhab.)

Data provided by the Regional Focal Point (RFP, sometimes also called as Autonomous Focal Point). The table includes the sources, if detailed. Data corresponding to 2015 could not be shown in all cases; the last piece of information available is the one shown, setting out the relevant year in parentheses. When such information is now available, it has been replaces by the information on household waste collected per inhabitant from the "Statistics on Waste Generation" prepared by the Spanish National Institute of Statistics. Information on the website: INEbase / Agriculture and the Environment / Environmental Protection and Waste / Statistics on Waste Generation

WATER

AVERAGE WATER CONSUMPTION PER INHABITANT (litres/inhabitant/day)

Spanish National Institute of Statistics. Information on the website: INEbase / Agriculture and the Environment / Water / Statistics on Water Supply and Sanitation / Water Indicators. 2000-2013 Series / Results by autonomous city and community / Indicators on Water Supply by Autonomous Community and City / 2.1.1 Volume of Water distributed to Households (litres/inhabitant/day).

AIR

PERCENTAGE OF STATIONS CLASSIFIED BY VALUE RANGE OF THE ANNUAL AVERAGE YEAR 2014

Source: Ministry of Agriculture, Food and the Environment, 2016. Air Quality Database. Directorate-General for Environmental Quality and Assessment and Natural Environment. Data provided by means of express request.

Methodological note: the data shown is the percentage of stations included in each one of the ranges in which the average annual concentration (measured in µg/m3) of each pollutant is classified:

NO_2: Referred to the Lower Evaluation Threshold (LET), Upper Evaluation Threshold (UET) and Annual Limit Value (ALV). These ranges are:

- Concentrations lower or equal to the LET/2 (13 µg/m^3)
- Concentrations between the LET/2 and the LET (13-26 µg/m^3)
- Concentrations between the LET and the UET (26-32 µg/m^3)
- Concentrations between the UET and the ALV (32-40 µg/m^3)
- Concentrations exceeding the ALV (> 40 µg/m^3)

PM10: Referred to the Lower Evaluation Threshold (LET), Upper Evaluation Threshold (UET) and Annual Limit Value (ALV). These ranges are:

- Concentrations lower or equal to the LET/2 (10 µg/mm^3)
- Concentrations between the LET/2 and the LET (10-20 µg/m^3)
- Concentrations between the LET and the UET (20-28 µg/m^3)
- Concentrations between the UET and the ALV (28-40 µg/m^3)

- Concentrations exceeding the ALV (> 40 µg/m^3)

PM2.5: Referred to the Lower Evaluation Threshold (LET), Upper Evaluation Threshold (UET) and Annual Limit Value (ALV). These ranges are:

- Concentrations lower or equal to the LET/2 (6 µg/m^3)
- Concentrations between the LET/2 and the LET (6-12 µg/m^3)
- Concentrations between the LET and the UET (12-17 µg/m^3)
- Concentrations between the UET and the ALV (17-25 µg/m^3)
- Concentrations exceeding the ALV (> 25 µg/m^3)

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

- Concentration lower or equal to the LTT (120 µg/m^3)
- Concentrations between the LTT and the TV
- Concentration higher than the TV (120 µg/m^3 and 25 exceedances in 3 years)

All pollutants include the number of stations used to perform the evaluation.

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 obtained from the INE.

Methodological Note: data refer to consumption by end clients by autonomous community.

BUSINESS RESPONSE AND SOCIAL PARTICIPATION

GREEN ECONOMY

This includes information on Green Jobs (number of green jobs existing in the relevant autonomous community within a given year) and Organic Labelling (number of products with organic label in 2015). Data provided by the Regional Focal Point. The table includes the sources, if detailed.

Methodological note: in the case of "Green Jobs", the lack of a standard methodology for its estimate led several autonomous communities to turn to an approximate estimate based on the number of jobs corresponding to the activity branch included in Group E of CNAE 2009 -activities related to water consumption, sanitation activities, waste management and decontamination-, expressed in thousand people . This estimate does not include those jobs corresponding to other CNAE 2009 groups which may be deemed to conduct environmental activities (conservation of the natural environment, hunting management, environmental research and technology, etc.), as well as those jobs corresponding to other sectors but which are related to the development of environmental activities, such as technicians within the environmental departments of the production

and service industries.

CITIZENS ADVICE BUREAU: RESPONSE TO INFORMATION REQUESTS

This shows the number of information requests received and answered in 2015 stating the response term. Data provided by the Regional Focal Point. The table includes the sources, if detailed.

ENVIRONMENTAL REPORTS

Data provided by the autonomous community submitted by National Focal Points within the EIONET Network

LINKS TO THE AUTONOMOUS COMMUNITY'S ENVIRONMENTAL WEBSITES OF INTEREST

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

Appendices

I Index of acronyms, abbreviations, units and clarifications

II Thematic index of indicators

III Contributors involved in the production and review of this report

APPENDIX I

INDEX OF SPANISH INITIALISMS, ACRONYMS, ABBREVIATIONS, UNITS AND CLARIFICATIONS

AEMA/EEA	*European Environment* Agency
AEMET	Spanish State Meteorological Agency (Agencia Estatal de Meteorología)
AENA	Spanish Airports Authority (Aeropuertos Españoles y Navegación Aérea)
AEPLA	Trade Association for Plant Protection (Asociación Empresarial para la Protección de las Plantas)
AGE	General State Administration
ANFFE	National Association of Fertiliser Manufacturers (Asociación Nacional de Fabricantes de Fertilizantes)
ASPAPEL	Association of Spanish Pulp, Paper and Cardboard Manufacturers (Asociación española de fabricantes de pasta, papel y cartón)
ATP	Public Transport Authority (Autoridad de Transporte Público)
BOE	Spanish Official State Gazette (Boletín Oficial del Estado)
CCAA	Autonomous communities
CE/EC	*European Commission*
CEDEX	Centre for Public Works Studies and Experimentation (Centro de Estudios y Experimentación de Obras Públicas)
CDTI	Centre for Industrial Technological Development (Centro para el Desarrollo Tecnológico Industrial)
CEE	European Economic Community
CCHH	River Basin Authorities
CIEMAT	Centre for Energy, Environmental and Technological Research (Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas)
CITES	*Convention on International Trade in Endangered Species of Wild Fauna and Flora.*
CLC	*Corine Land Cover*
CNAE	National Classification of Economic Activities (Clasificación Nacional de Actividades Económicas)
CNE (a)	Spanish National Accounting (Contabilidad Nacional de España)
CNE (b)	National Energy Commission (Comisión Nacional de la Energía)
CNMB	National Catalogue of Basic Materials (Catálogo Nacional de Materiales de Base)
CNR/NRC	*National Reference Centre*
CTE/ETC	*European Topic Centre*
DG	Directorate-General
DGT	Directorate-General of Traffic
DIRCE	Central Companies Directory (Directorio Central de Empresas)
DPMT	Public Maritime-Terrestrial Domain (Dominio Público Marítimo Terrestre)
EBCC	*European Bird Census Council*
Ecoembes	Non-profit organisation devoted to the recovery of packaging waste across Spain
Ecovidrio	Non-profit organisation devoted to the management of glass packaging recycling in Spain
EEMS	Spanish Sustainable Mobility Strategy (Estrategia Española de Movilidad Sostenible)
EEDS	Spanish Sustainable Development Strategy (Estrategia Española de Desarrollo Sostenible)
EESUL	Spanish Strategy for Urban and Local Sustainability (Estrategia Española para la Sostenibilidad Urbana y Local)
EIONET	*Environmental Information and Observation Network*
EMAS	*Eco-Management and Audit Scheme*
EMAU	Urban Environment Strategy (Estrategia de Medio Ambiente Urbano)
EMEP/VAG/CAMP	Cooperation Programme for the evaluation and monitoring of Long-distance Transport of Air Pollutants in Europe / (*European Monitoring Evaluation Programme*, *Global Atmospheric Watch*, *Comprehensive Atmosphere Monitoring Programme*)
ENP/PA	Protected Area
EOH	Hotel Occupancy Survey (Encuesta de Ocupación Hotelera)
EPF	Survey on Family's Budgets (Encuesta de Presupuestos Familiares)
ESYRCE	Survey on Crop Areas and Yields (Encuesta sobre Superficies y Rendimientos de Cultivos)
Eurostat	Statistical Office of the European Union
FAMILITUR	Survey on Spaniards' Tourist Movements (Encuesta de los movimientos turísticos de los españoles)
FAO	*Food and Agriculture Organization of the United Nations*
FEMP	Spanish Federation of Municipalities and Provinces (Federación Española de Municipios y Provincias)
FEOGA	European Agricultural Guidance and Guarantee Fund

FEHR	Spanish Federation of Hospitality (Federación Española de Hostelería)
FFCC	Railways (Ferrocarriles)
FRONTUR	Tourist Movement on Borders (Movimientos Turísticos en Fronteras)
GBAORD	Government budget and appropriations or outlays for R&D
GEI/GHG	Greenhouse Gases
GEREGRAS	Association of Cooking Oils and Fats Waste Managers (Asociación Nacional de Gestores de Residuos y Subproductos de Aceites y Grasas Comestibles)
HORECA	Hotel, Restaurant and Catering Sector (Sector de la Hostelería, la Restauración y el Catering)
IDAE	Institute for Diversification and Energy Saving (Instituto para la Diversificación y Ahorro de la Energía)
IDF	Inventory of Forest Damage (Inventario de Daños Forestales)
IEEM	Spanish Inventory of Marine Species (Inventario Español de Especies Marinas)
IEET	Spanish Inventory of Terrestrial Species (Inventario Español de Especias Terrestres)
IEHEM	Spanish Inventory of Marine Habitats and Species (Inventario Español de Hábitat y Especies Marinas)
IEP (a)	Primary Energy Intensity (Intensidad de Energía Primaria)
IEP (b)	Index of occupancy of protected land spaces (Índice de Superficie de Espacios Protegidos)
IEPNB	Spanish Inventory of Natural Heritage and Biodiversity (Inventario Español del Patrimonio Natural y de la Biodiversidad)
IET	Institute for Tourism Studies (Instituto de Estudios Turísticos)
IFN	National Forest Inventory (Inventario Forestal Nacional)
IGME	Geological and Mining Institute of Spain (Instituto Geológico y Minero de España)
IGN	National Geographic Institute (Instituto Geográfico Nacional)
INE	Spanish National Institute of Statistics (Instituto Nacional de Estadística)
INES	National Soil Erosion Inventory (Inventario Nacional de Erosión de Suelos)
IPCC	*Intergovernmental Panel on Climate Change*
IPI	Industrial Production Index (Índice de Producción Industrial)
IPPC	*Integrated Pollution Prevention and Control*
JACUMAR	National Counselling Board for Marine Farming (Junta Nacional Asesora de Cultivos Marinos)
LIC/SCIs	Sites of Community interest
LULUCF	It refers to the information on the activities of *Land Use, Land Use Change and Forestry*
MAB	*Man and Biosphere-MaB*
MAGRAMA	Ministry of Agriculture, Food and the Environment (Ministerio de Agricultura, Alimentación y Medio Ambiente)
MER	Strategic Noise Map (Mapa Estratégico de Ruido)
MF	Ministry of Public Works (Ministerio de Fomento)
MINETUR	Ministry of Industry, Energy and Tourism (Ministerio de Industria, Energía y Turismo)
MSSSI	Ministry of Health, Social Services and Equality (Ministerio de Sanidad Servicios Sociales e Igualdad)
NABS	Nomenclature for the analysis and comparison of science budgets and programmes
NÁYADE	National Bathing Water Information System (Sistema de Información Nacional de Aguas de Baño)
NEDIES	*Natural and Environmental Disasters Information Exchange System*
NNUU/NU/UN	*United Nations*
NTM	Total Material Requirement
OCDE/OECD	*Organisation for Economic Co-opereration and Development.*
OEPM	Spanish Patents and Trademarks Office (Oficina Española de Patentes y Marcas)
OLP	Long Term Target
OMM	Metropolitan Mobility Observatory of Spain (Observatorio de la Movilidad Metropolitana)
OMS/WHO	*World Health Organization*
OMT/UNWTO	*World Tourism Organization*
ONG/NGO	Non-governmental Organisation
ONS	National Drought Observatory (Observatorio Nacional de la Sequía)
OOAA	Autonomous Bodies (Organismos Autónomos)
OSE	Observatory of Sustainability in Spain (Observatorio de la Sostenibilidad en España)
OSPAR	Oslo and Paris Convention on the Protection of the Northeast Atlantic

OTLE	Spanish Transport and Logistics Observatory (Observatorio del Transporte y la Logística en España)
PAC/CAP	Common Agricultural Policy
PAES/SEAP	Sustainable Energy Action Plans
PAND	National Action Programme to combat Desertification (Programa de Acción Nacional contra la Desertificación)
PDRS	Rural Sustainable Development Plan (Plan de Desarrollo Rural Sostenible)
PECBM	*Pan-European Common Bird Monitoring Escheme*
PEIT	Strategic Infrastructures and Transport Plan (Plan Estratégico de Infraestructuras y Transportes)
PEMAR	State Waste Management Framework Plan 2016-2022 (Plan Estatal Marco de Gestión de Residuos 2016-2022)
PEPR	National Programme on Waste Prevention 2014-2020 (Programa Estatal de Prevención de Residuos 2014-2020)
PHE	Spanish Historical Heritage (Patrimonio Histórico Español)
PIB/GDP	Gross Domestic Product
PIN 2020	2020 Industrial Policy Integral Plan (Plan Integral de Política Industrial 2020)
PITVI	Infrastructure, Transport and Housing Plan (Plan de Infraestructuras, Transporte y Vivienda)
PM	Particulate matter in the air
PN/NP	National Park
PNCA	National Plan for Water Quality: Sanitation and Water Treatment (2007-2015) (Plan Nacional de Calidad de las Aguas: Saneamiento y Depuración (2007-2015))
PNIR	National Integrated Waste Management Plan (2008-2015) (Plan Nacional Integrado de Residuos (2008-2015))
PNOA	National Plan of Aerial Ortophotography (Plan Nacional de Ortofotografía Aérea)
PNR	National Reform Plan (Plan Nacional de Reformas)
PNSD	National Plan on Sanitation and Water Treatment (Plan Nacional de Saneamiento y Depuración)
PNUMA/UNEP	*United Nations Environment Programme*
PORN	Management Plan for Natural Resources (Plan de Ordenación de los Recursos Naturales)
PPC/CFP	Common Fisheries Policy
PPNN/NPs	National Parks
PRUG	Master Plan for Use and Management (Plan Rector de Uso y Gestión)
PTE/ETP	Equivalent Tourist Population
RAMPE	Spanish Network of Marine Protected Areas (Red de Áreas Marinas Protegidas de España)
RAMSAR	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
REPACAR	Spanish Association for Paper and Cardboard Recovery (Asociación Española de Recuperación de Papel y Cartón)
RIS	*Research and Innovation Smart Specialisation Strategy*
RMIP	Marine Reserves of Fishing Interest (Reservas Marinas de Interés Pesquero)
RRD	Disaster Risk Reduction (Reducción del Riesgo de Desastres)
RU/UW	Urban Waste
RUSLE	*Revised Universal Soil Loss Equation*
SACRE	Common Reproductive Birds Monitoring Programme by SEO / BirdLife
SAU	Utilised/Usable Agricultural Area (Superficie Agrícola Utilizada)

SECEM	Spanish Society for the Study and Conservation of Mammals (Sociedad Española para la Conservación y Estudio de los Mamíferos)
SEO	Spanish Ornithological Society (Sociedad Española de Ornitología)
SEPRONA	Nature Protection Service of the Spanish Guardia Civil (Servicio de Protección de la Naturaleza de la Guardia Civil)
SICA	Basic Information System on Acoustic Pollution (Sistema de Información sobre la Contaminación Acústica)
SIG/GIS	*Geographic Information System (GIS)*
SIG/IMS	Integrated Management System
SIGNUS	Integrated Management System of Used Tyres (Sistema Integrado de Gestión de Neumáticos Usados)
SCOPUS	Database including citations and bibliographic references by the publisher Elsevier
SNAP	Nomenclatura de Actividades Contaminantes de la Atmósfera / *Selected Nomenclature for Air Pollution*
SNS	National Healthcare System (Sistema Nacional de Salud)
SOER 2005	EEA Report: *State and Outlook on the Environment Report 2005*
SOER 2010	EEA Report: "The European Environment: State and Outlook 2010"
SOER 2015	EEA Report: "The European Environment: *"The European Environment: State and Outlook 2015 (SOER 2015)"*
SPCAN	Protection Service against Polluting Agents (Servicio de Protección Contra Agentes Nocivos)
UE/EU-15	Belgium, Denmark, Germany, Greece, Spain, France, Ireland, Italy, Luxembourg, The Netherlands, Austria, Portugal, Finland, Sweden, United Kingdom
UE/EU-25	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.
UE/EU-27	EU 25+ Bulgaria and Romania
UE/EU-28	EU 27 + Croatia
UICN/IUCN	International Union for Conservation of Nature / *The World Conservation Union*
UE/ET	Evaluation Threshold
UEI/LET	Lower Evaluation Threshold
UES/UET	Upper Evaluation Threshold
UV-B	Ultraviolet Radiation
VAB/GVA	Gross Value Added
VAG/HAW	*Global Atmosferic Watch*
VL/LV	Limit Value
VLA/ALV	Annual Limit Value
VLD/DLV	Daily Limit Value
VLH/HLV	Hourly Limit Value
VO/TV	Target Value
WISE	*Water Information System for Europe*
WWF	*World Wide Fund for Nature*
ZEC/SAC	Special Area of Conservation
ZEPA/SPABs	Special Protection Areas for Wild Birds
ZEPIM	Special Protection Areas of Importance for the Mediterranean Sea

Symbols, units and chemical compounds

€	Euro
€05	Euro value at constant prices in 2005
AOT 40	*Amount Over Threshold*
CCl_4	Carbon Tetrachloride
CFC	Chlorofluorocarbon
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
POP	Persistent Organic Compounds
VOC	Volatile Organic Compounds
COVNM	Non-methane Volatile Organic Compounds
dB	Decibel. Measure of sound pressure level
dB(A)	Weighted decibels (A-scale)
DBO_5	Five-day Biochemical Oxygen Demand
COD	Chemical Oxygen Demand
GT	*Gross Tonnage*: Measure of tonnage of fishing vessels. In use since 1998 when it replaced Gross Registered Tonnage (GRT)
GWh	Gigawatt-hour
h	Hour
ha	Hectare
inhab	Inhabitant
HBFC	Hydrobromofluorocarbon
HCFC	Hydrochlorofluorocarbon
hm^3	Cubic hectometre
kg	Kilogram
km	Kilometre
km^2	Square kilometre
ktoe	Kilotonnes of oil equivalent
kW	Kilowatt
kWh	Kilowatt-hour
l	Litre
L_{Aeq}	Equivalent continuous A-weighted sound pressure level. Expressed in A-weighted decibels (A)
Leq	Equivalent continuous noise level. Expressed in dB
L_{den}	Day-evening night noise indicator Measured in dB

L_n	Night-time noise indicator. Measured in dB
mg	Milligram
Tt	Thousand tonnes
MW	Megawatts
MWp	Megawatt peak
MWt	Megawatt thermal
m^2	Square metre
m^3	Cubic metre
N	Nitrogen
NH_3	Ammonia
N_2O	Nitrous Oxide
NO_x	Nitrogen Oxide
O_3	Ozone
P	Phosphorus
PCB	Polychlorinated biphenyl
PCT	Polychlorinated terphenyl
PFC	Perfluorocarbon
P_2O_5	Orthophosphates
PM10	Particulate matter with a diameter of 10 microns or less
PM2.5	Particulate matter with a diameter of 2.5 microns or less
ppm	Parts per million
Ppmm	Parts per thousand million
SF_6	Sulphur hexafluoride
SO_2	Sulphur dioxide
t	Tonne
t-km	Tonne-kilometre. Unit of measurement of freight transport. It is calculated by multiplying the number of tonnes transported by the number of kilometres travelled
TJ	Terajoule
GRT	Gross Registered Tonnes
p-km	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
µg	Micrograms
>	More than
<	Less than
1000 t	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 makes public 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 the Principality 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 Navarre
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 Environmental Profile of Spain, abbreviated references of the autonomous communities are likely to appear in the charts or tables, as otherwise it would be too 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 (NAMED IN SPANISH)

Clarification 3.

The English names of the autonomous communities across Spain are shown in the table below. Translations are from the Oxford Dictionary.

Spanish name	English name
Andalucía	Andalusia
Aragón	Aragón
Asturias	Asturias
Illes Balears /Baleares	Balearic Islands
Canarias	Canary Islands
Cantabria	Cantabria
Castilla y León	Castilla and Leon
Castilla-La Mancha	Castilla-La Mancha
Cataluña	Catalonia
C. Valenciana	C. Valenciana
Extremadura	Extremadura
Galicia	Galicia
Madrid	Madrid
Murcia	Murcia
Navarra	Navarre
País Vasco	Basque Country
La Rioja	La Rioja
Ceuta	Ceuta
Melilla	Melilla

APPENDIX II
THEMATIC INDEX OF INDICATORS

AREA / INDICATOR **PAGE**

APPENDIX III

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