

# Environmental profile of Spain 2012

Indicator-based report



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DE ESPAÑA

MINISTERIO  
DE AGRICULTURA, ALIMENTACIÓN  
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The purpose of this publication is to provide an overview of the environmental situation in Spain, with information broken out by Autonomous Community and with European Union references. The 2012 edition contains 85 indicators, arranged in 17 chapters, plus a specific section with information from the Autonomous Communities. Each chapter contains an introduction and various key messages, while each indicator has a corresponding chart, explanatory text and notes, together with the source of the data and links to websites where more information can be found. There is also a 'Background' chapter, which complements the environmental information with social and economic data.

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# **Environmental profile of Spain 2012**

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## INTRODUCTION

Since 2004, the *Environmental Profile of Spain* has been published annually and has become a work of reference for all those organisations, institutions and citizens who require a rigorous diagnosis of the environmental situation in our country.

Designed as a publication of general information on the state of the environment, it aims to offer an environmental radiography of the whole of Spain.

With this aim in mind, and being aware of the importance that environmental awareness has attained over recent decades, the Ministry of Agriculture, Food and Environment (MAGRAMA), prepares this report with the highest scientific precision, so that the information it contains is precise and relevant, as well as being useful for both those who are responsible for environmental management as well as citizens.

Nowadays, the publication of this environmental information is, in addition to being much needed, a legal requirement. Thus, the publication of the *Environmental Profile of Spain* satisfies current European, national and autonomic legislation in this area, regulating the right of access to information.

A notable new feature of this year's edition, in terms of its format, is the integral design of its contents in order to facilitate its visualisation by electronic means. This enhances the accessibility of the information for all users, enabling an interactive *Environmental Profile of Spain 2012*.

The report can therefore be consulted using mobile devices, which will no doubt lead to wider dissemination of the information due to greater ease of use. Likewise, this will promote education and awareness of environmental values, fostering the participation not only of managers and specialists but of the whole of society. The environment is a heritage we all share.

This, in short, is a declaration of principles: the firm conviction that the protection of the environment can be, and must be, considered as an ally in the economic and social progress of Spain. The environment is valuable in and of itself, but it can also be a source of wealth and employment, if we are able to manage it properly.



The indicators, set out in themes and sectors, and the basic data included in this report, contribute to this objective; and reflect the effort made by the Ministry of Agriculture, Food and Environment to strengthen the conservation of the natural environment, achieving a balance between the well-being of society and respect for the environment in which it carries out its activities.

This edition is divided into 17 chapters, together with an additional one containing the basic data of the Autonomous Communities, and is based on 85 environmental and socioeconomic indicators.

An analysis of the content shows, on the one hand, the positive results of the conservation of the environment in our country, and, on other, the challenges that lie ahead in this area. The environmental sector has enormous potential, both to face up to these and to respond to the demands of our society's economic activity. In this regard, it is worth mentioning the existence of leading international Spanish companies, as well as technology centres and universities with wide experience and professional training. The geographical situation, climatic conditions and cultural heritage also give our country a privileged, highly competitive position for a number of technologies.

Several ministerial and autonomic departments have participated in the preparation of the *Environmental Profile of Spain 2012*, as well as experts and technicians in the different areas. My sincere thanks for their work that allows us to know with precision the environmental parameters and factors that we need to manage to follow the path of sustainable development.

**Miguel Arias Cañete**

Minister of Agriculture, Food and Environment

## FOREWORD

The increasing importance of environmental information is directly related to a society's development. The truth of this has been consistently confirmed since the end of the last century and now, well into the 21st century, it has only become clearer.

Responding to this need, arising from the evermore global and sophisticated information society, is a challenge that we cannot neglect in environmental matters.

As evidence thereof, the *Environmental Profile of Spain 2012* gives continuity to a series of reports that intend to offer exactly that: an environmental portrait of Spain to political managers, experts, scientists, technicians, organisations, associations and citizens in general.

This publication reflects the effort that this Ministry is making to improve the conservation of the natural environment, seeking harmony and balance between the well being of society and the environment in which it carries out its activities. The data included in the profile show that economic development and the creation of employment are compatible with the conservation of the environment, provided that the limits imposed by nature are respected under the inalienable principle of civic responsibility.

This is because, as we all know, in environmental matters there is no turning back. We are moving towards a model of society that has less impact on our environment and a more rational and efficient management of natural resources.

**Overall**, the Profile depicts an environmental strategy that is structured around an improvement in air quality, the adoption of measures that encourage the adaptation to climate change of all sectors of our society and the development of effective policies for the reduction of greenhouse gases emissions. It also emphasises the importance of a realistic rationalisation of the use and management of water in the medium and long term, of the protection of natural areas and biodiversity, of the preservation of our coastal heritage and of the protection of the marine environment as a world leader in the field, strengthening and expanding the 'Natura 2000 Network' in this area. It does all of this without detracting from the progress achieved in environmental quality and assessment and the integration of the environment into productive economic sectors.

Concerning **air quality**, the 2012 data show that average air quality did not exceed the legislative limits for the various pollutants, calculated as weighted average values for the population. This analysis does need to be interpreted with caution, because at certain times and in specific city locations, the established limits and targets may be exceeded.

With the aim of improving air quality, the Ministry has recently adopted the **National Plan on Air Quality and Protection** ('AIRE Plan') 2013-2016; in this area it is also necessary to highlight the bringing into force, at the start of this year, of the new **Plan for the Promotion of the Environment ('PIMA Air')**, a pioneering initiative in Europe, focused on the improvement of air quality through the renewal of the commercial vehicle fleet and its substitution by other more efficient models with lower environmental impact.

Furthermore, in this edition we have included an additional indicator that shows the efforts made by the Ministry in the fight against **climate change**: the '**Clima Projects**', which are aimed at mitigating the effects of climate change. These projects aim to promote economic development and job creation. At the end of November 2012 the results of the first round of invitations were published, in which 37 projects were selected, all of which reduce emissions in sectors such as agriculture, transport, waste or in relation to residential properties.

In relation to **water**, the urban water consumption indicator has noticeably decreased for all sectors as a result of campaigns backed by the administration, especially by the Ministry of Agriculture, Food and Environment, aimed at raising awareness of sensible water resource use. The Rivers Volunteering Program (included in the National Strategy for the Restoration of Rivers) is an example of the actions taken by the Ministry and of society's commitment: in 2012 more than 33.400 volunteers participated in the programme.

There has also been progress on **water planning demarcation** in all the river basin areas, promoting the coordination of territorial interests, with the objective of consolidating the important role Spain has in Europe in water management, with the country being a leader in the implantation of river basin management.

In relation to the **natural environment**, it is worth pointing out that Spain is the leading EU country in terms of its contribution of protected areas to the **Natura 2000 Network**, with almost 28% of the country's protected areas included.

The richness of these habitats gives Spain a great abundance of different species of **fauna**. **Birds**, for instance, due both to their singularity and abundance, are some of the best ambassadors for our biodiversity and a great attraction for nature lovers, whether natives or visitors to Spain. With 569 species of registered birds, including nesting birds, migratory, wintering, wild or rare, 595 Special Bird Protection Areas, occupying more than 10 million of hectares, have been declared (almost 20% of our land area). This has immense tourism potential, attracting environmentally aware visitors, who are conscious of the importance of preserving natural heritage. Thus, our country has become a first class destination for ornithological tourism, with ample capacity to further strengthen its position in the international market, and a good example that a sustainable socioeconomic activity can be a source of employment and wealth.

Our **coasts**, in terms of water quality, have improved upon their already high standards, mainly because we have put a great deal of effort into the protection of the marine environment. The progress made on the development of the Network of Marine Protected Areas and the approval of Law 2/2013, of May 29, on Protection and Sustainable Use of the Coast, that modifies Law 22/1988, of July 28, the Coastal Law, are essential steps to continue along the path of the conservation of our natural environment and boost sustainable economic development in coastal areas.

As an indicator of a more green economy, Spain is the second country, after Germany, in terms of the implementation of the voluntary system of environmental management, EMAS, in its institutions.

In conclusion, the indicator information in the environmental profile allows us to understand the challenges that remain, as well as showing us the path to follow during the coming years.

Finally, I would like to thank every person and institution involved in producing this report, whether from the general state administration or the autonomic administrations, for their participation.

I am convinced that the results of this work will be positive and useful, both for citizens and managers, in order to achieve better environmental conservation. For the task I hope I can continue to count on the cooperation of all of you, who now hold in your hands the *Environmental Profile of Spain 2012*.

**Federico Ramos de Armas**  
Secretary of State for the Environment







# SUMMARY OF KEY MESSAGES

## AIR QUALITY AND EMISSIONS



The increase of 0.5% in Green House Gas (GHG) emissions produced in 2011 breaks the trend of the previous years and puts emissions at 21% over the base year established in the Kyoto Protocol. In 2011 Spanish contributions to EU GHG emissions were 7.7%, with emissions per capita and per unit of Gross Domestic Product (GDP) below the EU average.

Tropospheric ozone precursor emissions increased in 2011 by 1.4%, although during the period 1990-2011 they decreased by 25.3%. SO<sub>2</sub>, NO<sub>2</sub> and PM<sub>10</sub> concentration averages of the previous years have been lower than the legal emission limit values.

Emissions of particulate matter maintain the decreasing trend of recent years. The emissions of particulates smaller than 10 µm have fallen by 23.8% since 2000, while emissions of particulates smaller than 2.5 µm, the most harmful to human health, have been reduced by 22.5%. Non-industrial combustion plants and road transport are the sectors that emit most particulates in Spain.

In 2011, the population-weighted average air quality, in municipalities over 50,000 inhabitants, does not exceed the legal emission limit values (limits for NO<sub>2</sub> and PM<sub>10</sub>). Likewise, the average values for background contamination also comply with legal emission limit values.

## WATER



Consumption from the public water supply has decreased, being closer to the consumption levels of 1998. The consumption per capita has also been reduced, standing at 144 litres in 2010, compared to 171 litres in 2004.

Both the reservoirs of water in the form of snow and the contributions accumulated during the hydrological year 2011-2012 are lower than they were in the previous hydrological year and in the average of the last five years.

In general, a significant improvement has been seen in the organic contamination of the water of our rivers, with an increase in the number of stations registering lower contamination, measured as BOD<sub>5</sub>.

In 2012 more than half of the sampling points for fresh water bathing zones had excellent quality. In addition, a reduction in the percentage of zones classified as 'poor quality' and an increase in those registered as 'good quality' was noted.



**LAND**

According to cadastral data, the area occupied by urban plots in Spain has increased by nearly 19% between 2006 and 2012.

Almost 50% of the land surface in Spain that has been transformed into artificial surface during the period of 2000-2005, comes from agricultural areas with good quality soils.

During the year 2012 the works of the National Soils Erosion Inventory in relation to the provinces of Palencia and Salamanca, within the autonomous community of Castile-Leon, were completed.

**NATURE**

In 2012, Protected Natural Areas represented 12.38% of the total land area, while those areas included in the Natura 2000 Network represented 27.19%. Overall, taking into account the overlaps between these two categories, protected areas accounted for almost 27.85% of the total land area.

In 2012 total forest area in Spain covered more than 27.5 million hectares (55% of the total surface area of the country). The total woodland area is over 18 millions of hectares, representing 0.39 hectares/inhabitant.

Bird population trends have evolved positively in forest environments. However, conservation issues have shown up in agricultural and urban environments.

**COASTS AND MARINE ENVIRONMENT**

The first phase of the elaboration of Spain's Marine Strategies was completed in 2012, during which an initial assessment of the state of the marine environment was made, together with the definition of what would be a good environmental condition and the establishment of environmental objectives.

In total 95.85% of the length of the Spanish coastline is demarcated.

In 2012 the amount of coastal bathing water sampling points obtaining an excellent rating was nearly 90%. Only 2.9% of the sampling points received a poor rating.

## GREEN ECONOMY



The energy intensity of the Spanish economy is below the average of the European Union, consuming less energy per unit of generated GDP. After a period of stability, from 2004, the energy intensity in Spain has reduced at a faster rate than in the EU.

Spain remains the second leading country in terms of EMAS registered organisations within the EU, representing around 28% of the total (June 2012). In 2012 the number of registered organisations has increased slightly.

Spain has designed a strategy for the reduction of GHG emissions through projects in a wide range of sectors. In the first round of invitation for the Clima Projects, promoted by the Ministry of Agriculture, Food and Environment, 194 projects were presented, with 37 of them being selected. It is estimated that these projects will allow for a reduction in emissions of up to 800.000 tonnes of CO<sub>2</sub>-equivalent.

In 2010 Spain contributed around 6% of the environmental taxes of the EU (the sixth largest country in terms of contribution). As a percentage of GDP, the Spanish contribution was the lowest of the EU-27 countries with environmental taxes representing only 1.65% of GDP, while the European average was 2.37%.

## ENVIRONMENTAL RESEARCH, DEVELOPMENT AND INNOVATION



Spain is ninth in the world in terms of scientific output in the environmental sciences.

During the period 2008-2011, Spain carried out 2,094 research, development and innovation projects, with total grants amounting to 192.1 million euros.

These environmental programmes represent 4% of the total General State Budget in 2013.

## WASTE



Total municipal waste production has decreased over recent years, coupled with a reduction in waste production per inhabitant, which reached its maximum level in 2000.

Between 2000 and 2011 the decrease was 19.3%, going from 658 kg/inhabitant to 531 kg/ inhabitant.

The overall rates for packaging waste recycling and recovery have increased nearly constantly, going beyond the objectives established by legislation.

Spain, with a paper and cardboard recycling rate close to 80% in 2011, is one of 13 EU countries exceeding a recycling rate of 70%.

## AGRICULTURE



In 2011 the consumption of fertiliser per hectare (expressed as nutrients) decreased 7%, standing at 102 kg/inhabitant.

The consumption of plant protection products, expressed in kg of active ingredient per hectare, has also decreased 5.4%.

In 2011 Spain stood, for the fourth consecutive year, as the European country with the largest land area dedicated to organic farming with 1,845,039 hectares.

Irrigated land was recorded at 3,522,616 hectares, which is 16% of the total agricultural area.

## ENERGY



According to Eurostat, in 2010 Spain was the sixth on the list of EU-27 countries with the lowest level of primary energy intensity.

For the first time since 2005 there was an increase in the intensity of GHG emissions arising from energy production, being 17.64% higher than in 2010. Nevertheless, between 1990 and 2011 the intensity of these emissions has decreased almost 58%.

Renewable energy is still playing an important role in the structure of primary energy demand, despite the slight 1.85% decrease seen in the 2011 contribution, placing Spain sixth in terms of the generation of electricity from renewable energy.

## INDUSTRY



In 2011 the industrial sector consumed 21,094 ktoe of final energy, 2% less than the previous year, and the lowest level of the last 15 years.

The N<sub>2</sub>O emissions in the year 2011 decreased to 62% below 1990 values.

During the same year, industry improved its environmental efficiency with an increase in gross value added, at the same time as energy consumption and CO<sub>2</sub> emissions decreased.

## FISHING



The number of vessels in the Spanish fleet was 10,505; in 2011 the decreasing trend continued in terms of the number of vessels and capacity of the Spanish fishing fleet, with a year-on-year decrease of 3.1%.

The total catch of the Spanish fishing fleet (referring to live weight) in 2011 increased 11.9%, moving from 768,691 tonnes in 2010 to 860,221 tonnes in 2011.

The total production in aquaculture in 2011 experienced a year-on-year increase of 3.3%, reaching 291,235 tonnes.

## TOURISM



In 2012 Spain received a total of 57.7 million of foreign tourists, 1.8% more than the previous year, equivalent to 1.22 tourists per inhabitant.

In 2012 the number of visitors to the National Parks saw a decline of 6.3%, with 9,535,808 visitors compared to 10,181,164 in 2011.

According to provisional figures, in 2012 accommodation and capacity rose by 2.3% and 3.2%, while the number of tourists and the overnight stays decreased by 2% and 2.5% respectively.

## TRANSPORT



The structure of the passenger car fleet has undergone changes, with a greater proportion of diesel vehicles - in 2011 there were 47.1% petrol vehicles and 52.9% diesel vehicles. Additionally an increase in the number of hybrid vehicles in circulation can be seen, with an increase to approximately 20,700 registered vehicles in 2011.

Transport energy consumption increased by 84% between 1990 and 2011, with continuous growth up to 2007. Domestic transport consumed 69.5% of the entire energy sector, with road transport making up almost 92%. Diesel was used to produce almost 70% of the energy consumed in 2011.

There was a reduction in the quantity of pollutants released per unit of energy used in transport, especially ozone and acidifying precursors and, to a lesser degree, in particulate matter and GHG. One of the main reasons for these reductions is the renewal of the car fleet, with existing vehicles being constantly replaced by more efficient vehicles with lower consumption.

## HOUSEHOLDS



In 2010 the gross income of Spanish households continued to decline, together with a decrease in the average expenditure per household.

In 2011 the number of households grew by 1% but overall energy consumption decreased by almost 5%.

There was a slight decrease in the number of cars per household in 2011 (0.6%) but the number of motorcycles increased by 2.3%.

In 2010 the growth in the production of total urban waste per household slowed and the organic amount of urban waste per household collected separately increased.

## URBAN ENVIRONMENT



In total 79.1% of the Spanish population lives in municipalities with more than 10.000 inhabitants.

In 2012 these municipalities represented only 9.4% of the total number of 8,116.

The number of properties registered as being of cultural interest, which are an important part of the architectural heritage of the cities, has grown over recent years.

The Network of Local Development Networks is a vehicle for public participation in the environment and the development of 'Agenda 21'. This network included 2,801 municipalities in 2011, with a population of around 28.2 million of inhabitants; additionally, 934 signed the Covenant of Mayors.

## NATURAL AND TECHNOLOGICAL DISASTERS



In 2012 there were 35 deaths from natural disasters, 15 of which were due to floods, 10 from forest fires, and seven caused by marine storms.

According to provisional data, during 2012 there were a total of 10,520 incipient forest fires registered, with 5,382 declared fires, giving a total of 15,902 incidents.

In 2012 a total of 209,855 hectares of forest surface were affected; 82,201 hectares of which was wooded land.

In relation to accidents in the transport of dangerous goods by road and rail with possible environmental damage, in 2011 there were 26 such accidents, one more than in the previous year.

During 2012 no incidents involving oil tankers were registered on the Spanish coasts.

