

URBAN ENVIRONMENT 2.15



The urban environment, where an ever increasing number of Europeans live, constitutes one of the main elements of social development and wellbeing, while also being the place that poses many of the challenges faced by society. Almost 80% of the Spanish population lived in an urban environment in 2011, where an urban environment is defined as a city with more than 10,000 inhabitants. The figure was 76% in 2000.

The urban population grew by 21.1% between those two years, while the population itself only rose by 16.5%. The number of urban municipalities increased by 19.2% between 2000 and 2011, although the pattern was not uniform across autonomous communities. In 2011, towns of more than 10,000 inhabitants accounted for 9.4% of the total.

The EU “Energy Efficiency Plan 2011” considers that the greatest energy saving potential lies in buildings and establishes a series of instruments to trigger the renovation process in public and private buildings and to improve the energy performance of the components and appliances used in them.

This Plan includes an initiative called “Smart Cities and Smart Communities” to develop the European framework for innovative and efficient solutions at the municipal level. They are based on urban mobility and



KEY MESSAGES

As in Europe, the population living in urban areas is also on the increase in Spain, although there has been a slowdown in growth rates in recent years.

Population-weighted mean air quality values in all the towns and cities with more than 50,000 inhabitants were below the regulatory limit. However, a high percentage of the population suffer from problems due to particle and nitrogen oxide pollution.

Road traffic is the main cause of the environmental noise. During the second phase of the assessment and management of environmental noise, the scope will be extended by increasing the sample population, stretches of road and rail and airports.

Spain's protected Historical Heritage registered an increase in the number of Sites of Cultural Interest. In 2010, the largest increases were recorded by historical sites and archeological areas.

In 2011, urban passenger transport increased by 0.6% in relation to the previous year. By type, metropolitan rail transport increased by 1.3%, while bus transport increased by 0.1%.

The Network of Local Sustainable Development Networks is a means for public participation in environmental policy and the Agenda 21 Local. This network included 2,801 towns and cities and nearly 28.2 million inhabitants in 2011. Also in 2011, 934 towns and cities had signed the mayors' pact.

INDICATORS

- Urban pressure on land
- Air quality in the urban environment
- Environmental noise
- Architectural heritage of cities
- Urban transport
- Participation by citizens in urban sustainability

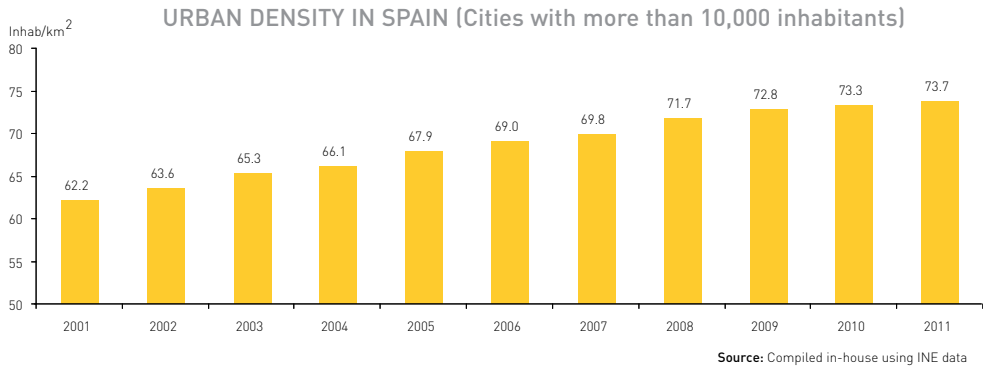
2.15 URBAN ENVIRONMENT

'green' infrastructure measures, the latter contemplating the use of trees and plants to reduce temperatures in urban areas and therefore energy requirements as a way of adapting to climate change. Urban development planning must stimulate sustainable growth and produce an economy low in carbon emissions that uses resources effectively. Promoting clean public transport, enhancing the energy performance of buildings and planning measures aimed at addressing the size of settlements are some of the options that the EU has proposed.

The EU European Green Capital Award evaluates "how green a city is" and aims to reward best practices and promote the improvement and establishment of behaviour models in urban areas. The cities of Stockholm (2010), Hamburg (2011), Vitoria-Gasteiz (2012) and Nantes (2013) have been awarded this title to date.

Urban pressure on land

Since 2008, there has been a decrease in the growth of urban population density



On 1 January, the Spanish population stood at 47,190,493, 79% of which lived in urban areas with more than 10,000 inhabitants.

Population increases in urban areas have been a constant feature in recent years and have also resulted in an increase in "urban density" (calculated by comparing the population living in municipalities with more than 10,000 inhabitants against their total surface area and that of each autonomous community). Population density in urban areas has risen from 62.2 inhabitants/km² in 2001 to 73.7 inhabitants/km² in 2011.

The slowdown in this growth, which began to be noticed in 2008, is even more visible in 2011. Five autonomous communities recorded decreases in urban density, compared to only two that recorded decreases in 2010 on 2009. The Balearic Islands and Castile-La Mancha recorded increases of more than one percentage point in urban density in 2011 (1.7% and 1.6%, respectively), while the rest recorded increases of less than 1%. The average for Spain as a whole was of 0.5%.

The most densely populated Autonomous Communities are Madrid (761.5 inhab/km²), the Canary Islands (255.6 inhab/km²), the Basque Country (244.5 inhab/km²), Catalonia (191 inhab/km²), the Balearic Islands (188.2 inhab/km²), Valencia (182 inhab/km²) and Murcia (124.9 inhab/km²). Asturias, Andalusia and Cantabria are also above the national average (73.7 inhab/km²), while the rest are below. The population situation in Ceuta and Melilla cannot be compared to the Autonomous Communities due to how small these cities are and their population density.

URBAN DENSITY BY AUTONOMOUS COMMUNITY

AC	Population in cities of more than 10,000 inhab.	Urban density in 2011 (inhab/km ²)	% Change (2001-2011)	% Change (2010-2011)
Total	37,287,423	73.7	18.6	0.5
Andalusia	6,728,738	76.8	18.0	0.8
Aragon	918,714	19.3	13.5	-0.1
Asturias	936,780	88.3	1.8	-0.2
Balearic Islands	939,336	188.2	34.0	1.7
Canary Islands	1,903,255	255.6	23.9	0.4
Cantabria	396,549	74.5	10.9	-0.3
Castile and Leon	1,434,318	15.2	5.5	-0.2
Castile-La Mancha	1,172,341	14.8	36.2	1.6
Catalonia	6,132,279	191.0	21.2	0.2
Valencia	4,233,056	182.0	25.2	-0.1
Extremadura	541,626	13.0	12.1	0.7
Galicia	1,940,283	65.6	7.3	0.7
Madrid	6,113,527	761.5	20.5	0.5
Murcia	1,413,374	124.9	28.5	1.2
Navarra	350,105	33.7	21.2	0.8
Basque country	1,768,577	244.5	3.9	1.3
La Rioja	203,713	40.4	24.0	-0.1
Ceuta and Melilla	160,852	5,026.6	11.3	2.7

Source: Compiled in-house using data from INE.

NOTES

- The indicator shows the pressure exerted on land by urban population centres with over 10,000 inhabitants. It is calculated as the coefficient of the population living in these municipalities and the surface area of each respective autonomous community. For the purpose of calculating the indicator, the data provided by the municipal register as at 1 January 2001 and at 1 January 2011 were used.
- "All municipalities with 10,001 or more inhabitants" are traditionally considered urban. Although this definition is used to calculate various indicators, it might well be disguising many situations that are not really urban (according to the methodology used to delimit Urban Areas in Spain by the Statistical Atlas of the Ministry of Public Works).
- According to the Statistical Atlas of Urban areas in Spain, there are 1,076 urban areas in Spain (13.3% of Spanish municipalities). Their population accounts for 81.4% of the total for Spain and the surface area they occupy represents 20.6% of the country's total land area. There are 7,038 non urban areas (86.7% of Spanish municipalities), which account for 18.6% of the total population and 79.4% of the total surface area.

SOURCE

- INE. Municipal register (different years). See: INEbase / Demography and population / Population figures and Demographic Censuses/Official population figures: Revision of the Municipal Register.
- INE. Geographic area. See: INEbase/Physical variables and environment/Physical variables/Territory/Population, area and density by Autonomous Community and province/Population, area and density by Autonomous Community and province.
- Ministry of Public Works, 2012. Statistical Atlas of Urban areas.

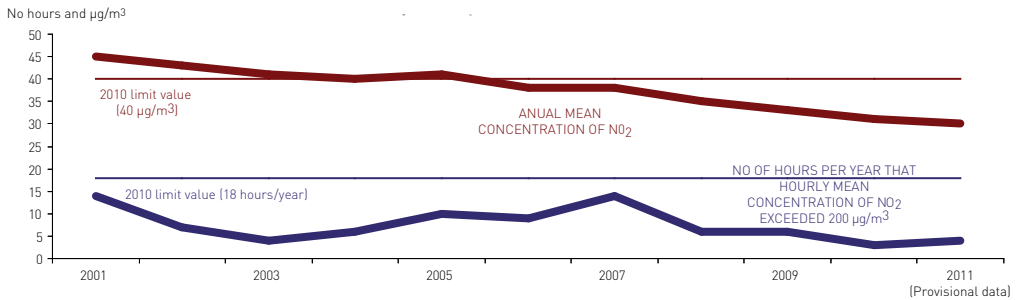
FURTHER INFORMATION

- <http://www.ine.es>
- <http://siu.vivienda.es/portal/>

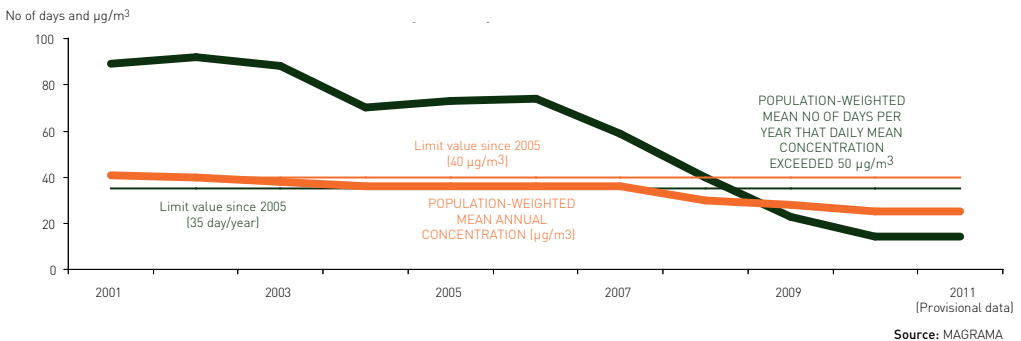
Air quality in the urban environment

The mean air quality in cities with more than 50,000 inhabitants remains below the regulatory limits

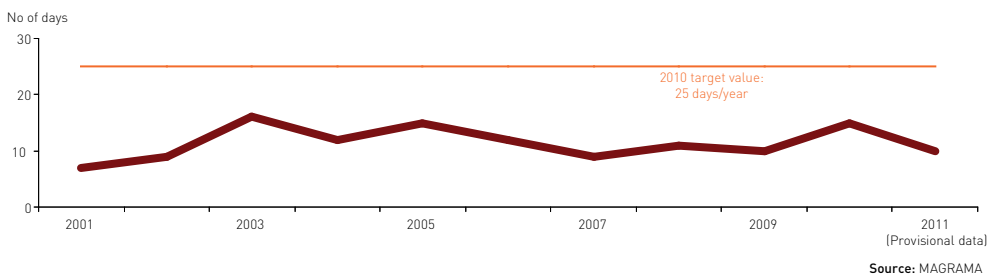
NO₂: POPULATION-WEIGHTED MEAN N° OF HOURS PER YEAR THAT HOULY MEAN CONCENTRATION EXCEEDED 200 µG/m³ AND ANNUAL MEAN CONCENTRATION
(Total for Spanish municipalities >50,000 inhabitants)



PM10: POPULATION-WEIGHTED MEAN N° OF DAYS PER YEAR THAT DAILY MEAN CONCENTRATION EXCEEDED 50 µG/m³ AND ANNUAL MEAN CONCENTRATION
(Total for Spanish municipalities >50,000 inhabitants)



URBAN OZONE: POPULATION-WEIGHTED MEAN N° OF DAYS PER YEAR THAT CONCENTRATION LEVELS EXCEEDED THE MAXIMUM DAILY 8-HOUR RUNNING AVERAGE OF 120 µG/m³
(Total for Spanish municipalities >50,000 inhabitants)



The analysis carried out presents the mean air quality in Spanish cities with more than 50,000 inhabitants. This valuation is performed by weighting the means calculated using the population of the cities under analysis. This estimate reveals that none of the pollutants exceed the regulatory levels (NO₂ and PM10 limits and ozone target value).

The population-weighted average values of both the mean annual concentration and also the number of hours that exceeded a 1-hour mean concentration of nitrogen oxide of 200 µg/m³ display a downward trend and no longer exceed the limits forecast for 2010. However, various specific monitoring stations have recorded excessively high levels of these pollutants.

The indicators for suspended particulate matter smaller than 10 microns have also remained below the level set by the population-weighted mean values of the mean annual concentration. This is also the case, since 2009, of the population-weighted mean value of the number days per year that the average daily concentration exceeds 50 µg/m³. This pollutant is one of the most significant air quality problems faced by cities, due to its harmful effects on health. And as in the previous case, specific monitoring stations have recorded excessively high values for this pollutant. This situation is often made worse in Spain by periods during which dust particles from the north of Africa intrude on the country's air environment.

The number of days per year that the level of ozone exceeded the eight-hour running average maximum daily concentration of 120 µg/m³ decreased in 2010. The target value has not been exceeded in any of the years included in the data series.

NOTES

- The indicator monitors the variables covered by the European Common Indicators (ECI) project and presents trends in these in comparison with the limit and target values set for 2005 and 2010 under current legislation (Royal Decree 102/2011). For each pollutant, the mean value for all of the stations belonging to each municipality with over 50,000 inhabitants (provided a sufficient amount of valid data is available) was multiplied by the population of that municipality. The sum of these values for all of the municipalities included, divided by the total population of the same, provides the weighted mean value. In the case of ozone, the indicator, in accordance with applicable legislation, is based on the triennial mean.
- All stations with sufficient data (85% for daily and hourly exceedances and 50% for annual mean concentrations) were taken into account. Even so, it is worth highlighting that the mean value obtained is a representation of the mean situation as regards that pollutant, and there may be considerable differences between this value and individual values recorded in particular stations in the towns and cities covered. The total number of stations considered when calculating the indicators varied throughout the period, which had a significant effect on the final result.
- It should be noted that the analysis does not include changes in concentrations of SO₂ and CO, owing to the fact that in urban environments these do not represent a problem. The limit value for CO (daily mean maximum of 10 mg/m³ measured as an 8-hour running average) has not been exceeded since 2002, while the SO₂ limit value has not been exceeded since 2009.
- The data for 2011 are provisional.

SOURCES

- Ministry of Agriculture, Food and the Environment, 2012. Air Quality Database. Directorate General for Quality and Environmental Assessment and Natural Environment.

FURTHER INFORMATION

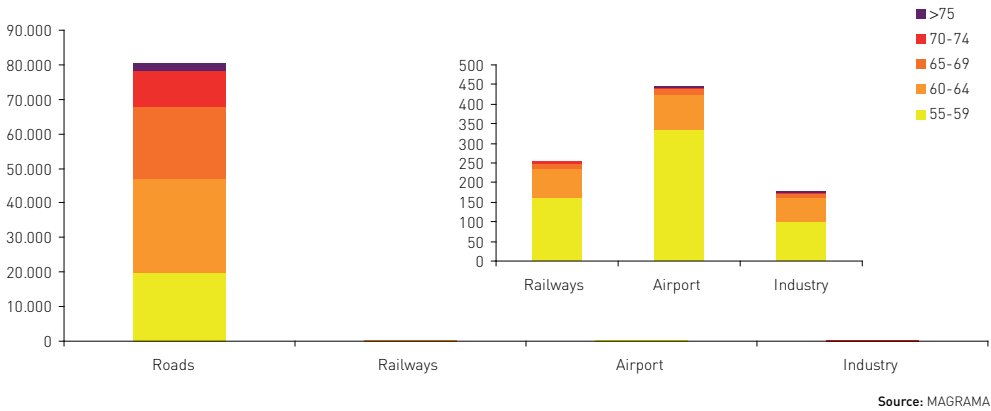
- <http://www.eea.europa.es>
- [Http://www.magrama.es](http://www.magrama.es)

Environmental noise

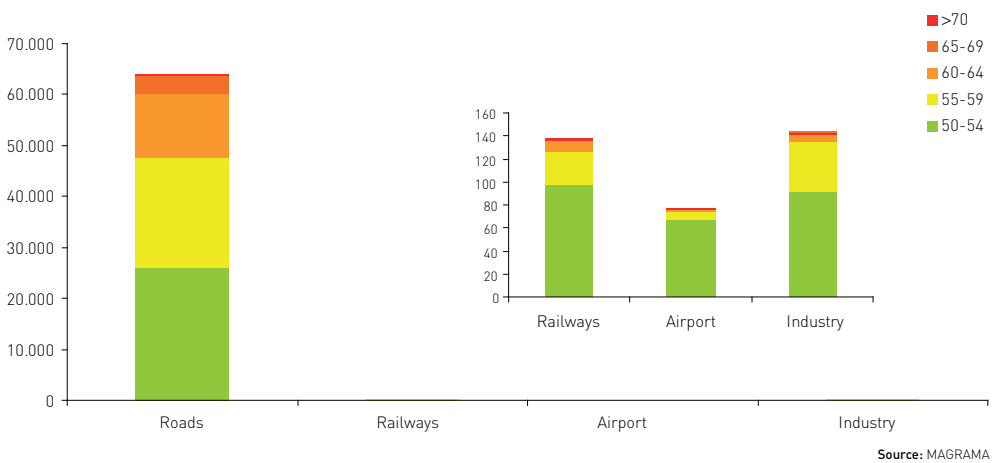
Road traffic continues to be the main cause of noise, both inside and outside major cities

NOISE LEVELS IN URBAN CONURBATIONS (2010):
LDEN AND LN INDICATORS (expressed in hundreds)

POPULATION EXPOSED BY NOISE SOURCE (Lden)

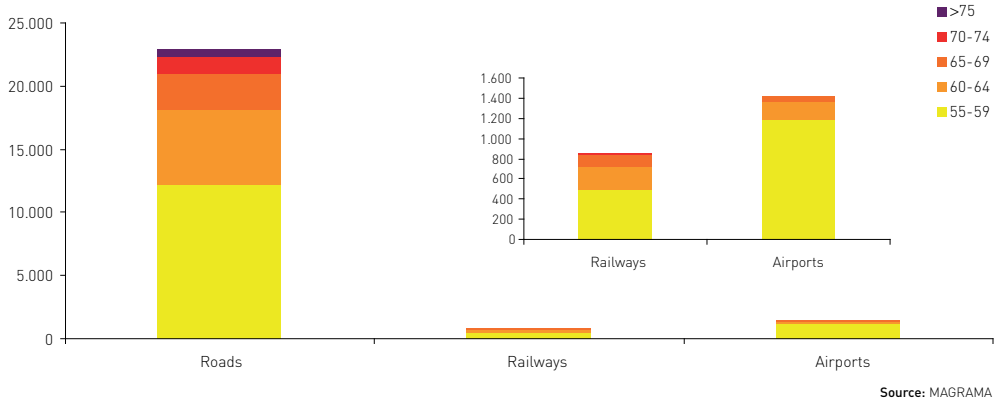


POPULATION EXPOSED BY NOISE SOURCE (Ln)

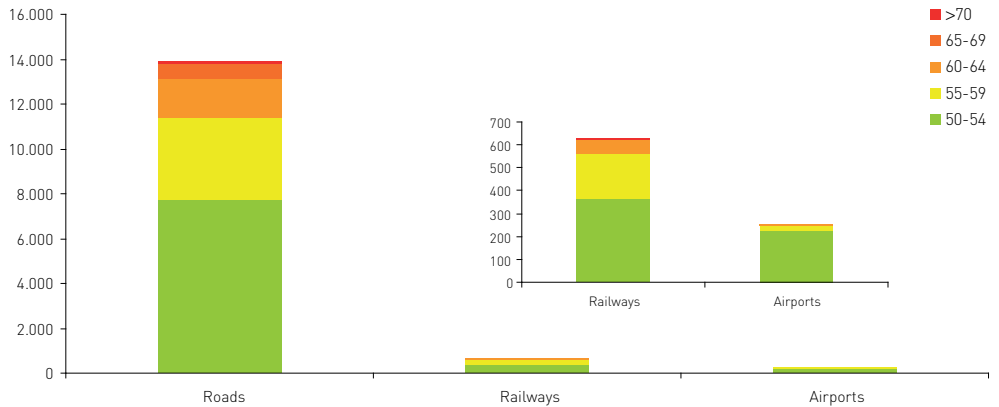


NOISE LEVELS OF TRANSPORT INFRASTRUCTURES: MAJOR ROADS, MAJOR RAILWAYS AND AIRPORTS L_{den} AND L_n INDICATORS (expressed in hundreds)

POPULATION EXPOSED BY NOISE SOURCE (L_{den})



POPULATION EXPOSED BY NOISE SOURCE (L_n)



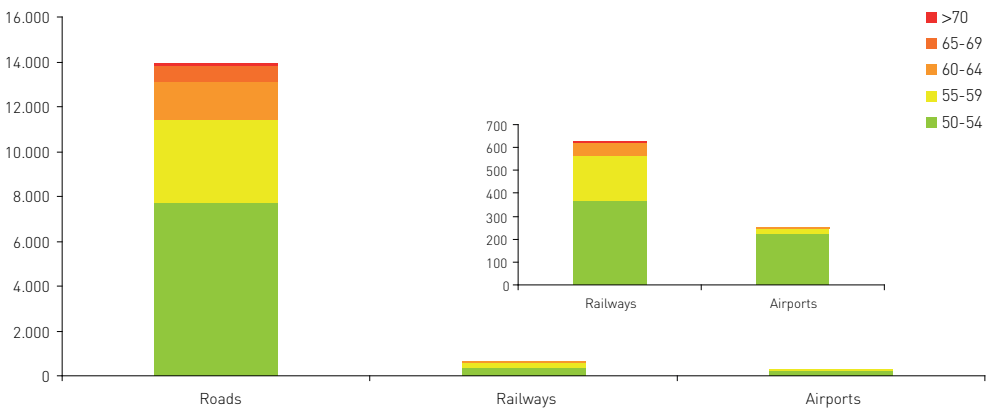
Following completion of phase one of Directive 2002/49/EC, of 25 June, on the assessment and management of environmental noise, which was transposed into Spanish law (Law 37/2003 of 17 November, on noise, and Royal Decree 1513/2005, on the assessment and management of environmental noise), the data obtained indicate that 8,130,800 people are affected by noise caused by road traffic, railways, airports and industrial facilities in major cities. And outside such cities, some 2,520,500 people are affected, of whom 2,292,900 live in the vicinity of major roads, 85,300 near major railways and 142,300 near airports.

In the major cities, the main cause of noise is road traffic, which affects 99% of the population studied. Outside built-up areas, road traffic affects 91% of the population, air traffic affects 6% and rail affects 3%.

The action plans devised by various measures to improve the noise quality, as the improvement of mobility in the cities, reducing the emission of noise, actions in the recipient and on the road to spread, education of citizenship and the declaration of “quiet areas” in built-up areas.

The second Phase of implementation of the Directive, seems to be more complex, with increases in the number of affected areas: big agglomerations, major roads, rail and airports. Its strategic noise maps should be made before 30 June 2012.

SCOPE OF PHASES OF DIRECTIVE 2002/49/EC



In big agglomerations it will be necessary to analyse populations with more than 100,000 inhabitants; in major roads it will be necessary to study areas with more than 3 million vehicles per year and in the main railways those with more than 30,000 trains per year.

On harmonising and coordinating the work to develop during the second Phase, as well as to facilitate communication of results to the European Commission, by the MAGRAMA, the Spanish Government has produced a document entitled “*Instructions on the delivery of the results of the Strategic Noise Maps of the second phase of implementation of Directive 2002/42/EC*” for the administration bodies which have to make the Strategic Noise Maps.

SOURCES

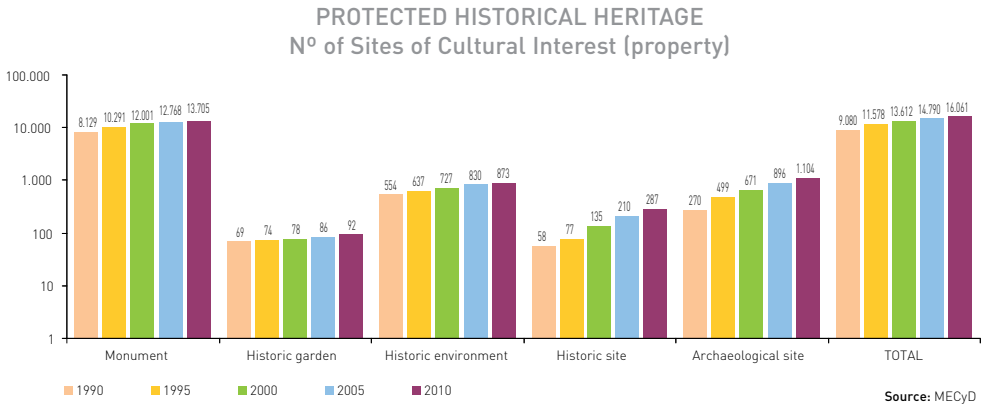
- Ministry of Agriculture, Food and Environment. Basic Information system on Noise Pollution (SICA). Directorate General for Quality and Environmental Assessment and Natural Environment.

FURTHER INFORMATION

- <http://sicaweb.cedex.es>
- http://eea.eionet.europa.eu/Public/irc/eionet-circle/eione_noise/library
- <http://ec.europa.eu/environment/noise/>

Architectural heritage of cities

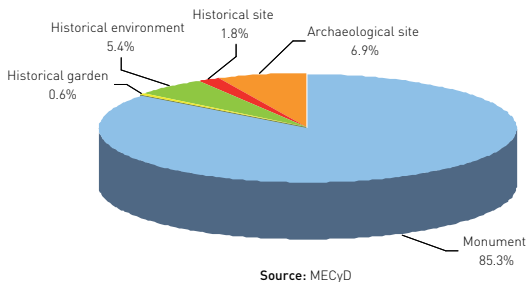
Increase in Spain the Historic Heritage protected: in 2010 the number of Sites of Cultural Interest reached 16.061



In the year 2010, the amount of property of cultural interest has increased, reaching 16.061 elements, 157 more than the previous year, basically due to increases in the historical sites and archaeological (areas that have come to be increased something more than 14% each).

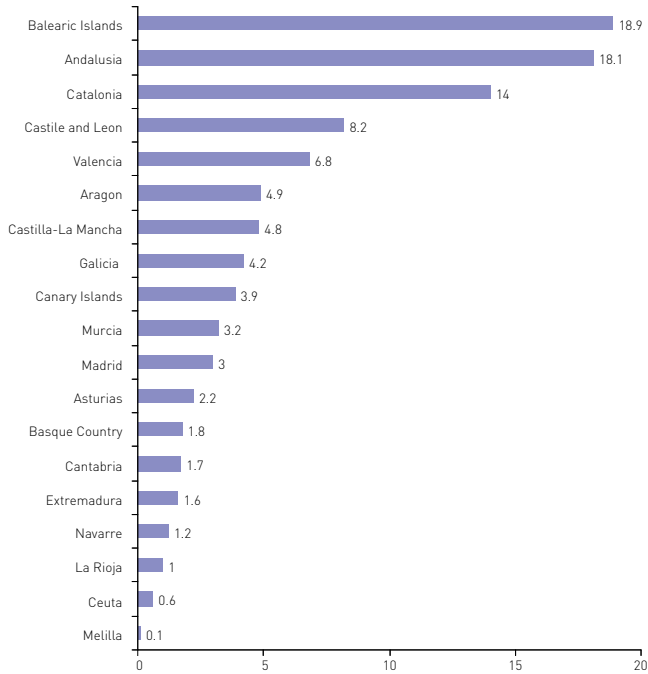
In 2010, monuments accounted for 58.3%, archaeological sites 6.9%, historic environments 5.4%, historical sites 1.8% and historic gardens 0.6%.

BREAKDOWN OF SITES OF CULTURAL INTEREST BY CATEGORY (2010)



Balearic Islands, Andalusia, Catalonia, Castile-Leon and the Community of Valencia, are the autonomous communities with greatest contribution to the Historical Heritage. Together these five regions accounted for 66% of the Sites of Cultural Interest declared in 2010.

BREAKDOWN OF HISTORICAL HERITAGE BY AUTONOMOUS REGION. 2010 (%)



Source: MECyD

NOTES

- The graph showing data on Protected Historical Heritage was produced using a logarithmic scale due to the large difference between the number of monuments and the other categories
- The Spanish's Historical Heritage, according to their category and on the basis of its legal protection, is classified into: Cultural Interest goods (BIC), which can be movable and immovable property and other Goods with special relevance.

SOURCES

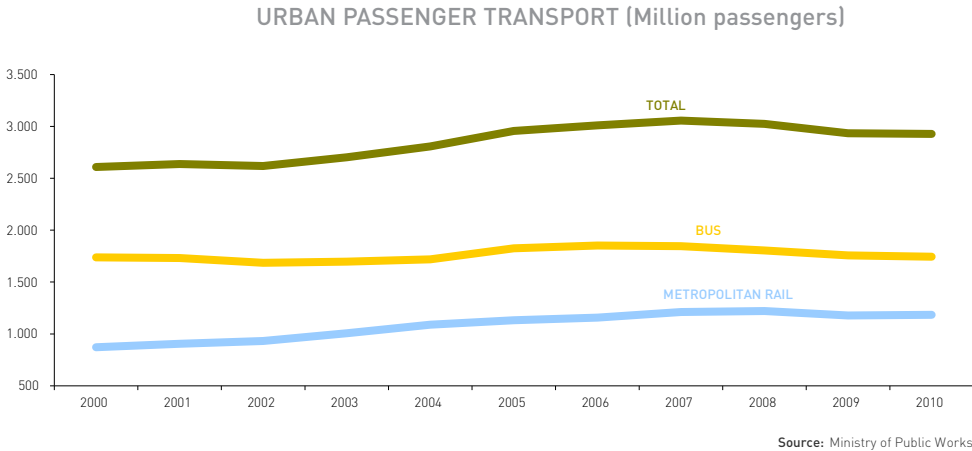
- Ministry of Education, Culture and Sport, 2012. Basis of the statistical data Culture base. Consultation in web page.

FURTHER INFORMATION

- <http://www.mcu.es>
- Ministry of Education, Culture and Sport, 2011. Statistical yearbook of cultural, 2011.

Urban transport

Urban transport of passengers increased a 0.6% in 2011



Urban transport of passengers has grown significantly in recent years, shaping up as a fundamental element of urban development. Between 2000 and 2010 passengers who have used this public service grew by 12.2%, stressing the use of the metropolitan, with an increase of 35.9% compared to bus, which has only 0.3%, even though they have greater demand in a number of users. As in other sectors, the year 2007 was the year in which use of urban transport was most frequent, followed by a decrease in demand from the beginning of the economic crisis. Nevertheless, this increase has been accompanied extensive use of private cars in urban areas, particularly in journeys to work places. We must bear in mind the new urban culture developed in recent years, with a expansion towards the outlying areas, motivated, inter alia, by high prices of homes in city centres, which requires major distances to the workplaces.

“Statistics on Passengers Transport” drawn up annually by the National Statistics Institute, offers a full account of the total passenger transport, which includes a section specifically on urban transport of passengers. The balance sheet total of the year 2011, shows us that the total public transport reported an increase of users of 0,3% with respect to 2010 in which all modes of land transport submitted positive rates.

In 2011, urban transport increased by 0.6% with respect to 2007: metropolitan did 1.3%, while the urban transport by bus, which includes cableways and trams, increased by 0.1%.

Seville, with a 8.6% increase was in the city with the most growth in metropolitan transport, while the Basque Country was the autonomous community with the most growth in transport by bus, with a 3.0%.

Short distance transport is part of the intercity transport network, but it is a complementary feature of the system of transport to and from the urban environment.. In 2011, bus transport connecting cities to their surrounding areas decreased by 0,1%, while the commuter train service increased by 2.6%.

In 2009 public transport metropolitan areas (AMT) accounted for around 55% of the Spanish population. These included 1.147 municipalities with more than 25 million inhabitants and an area of 66.723 km².

Regional EU cohesion policy (2007-13 programming) promotes investments in sustainable growth, based on the effective use of resources and low carbon emissions, should support a shift towards more efficient modes of transport. It is necessary to make efforts to build a clean urban public transport system, maximising the use of clean vehicles with good energy efficiency and promote non-motorized transport., such as rail transport.

NOTES

- Metropolitan area: In accordance with the criteria established by the OMM, a metropolitan area is defined as "an urban geographical area with a high degree of interaction between its various urban centres in terms of journeys, day-to-day relationships, economic activity, etc." A single definition has not been established to demarcate Spain's metropolitan areas. Under OMM criteria, metropolitan areas coincide with the area within which each Public Transport Authority (PTA) operates.
- Urban passenger transport data contains information from: F. C. Metropolitano de Barcelona, S.A.; Metro Bilbao, Madrid Metro S. A.; Seville Metro Sociedad Concesionaria de la Junta de Andalucía, S. A.; Ferrocarrils of the Generalitat Valenciana; TRAM and of Alicante Metrovalencia; Barcelona Subway Transport; Municipal Transport of Madrid, S. A.; Municipal Valencia Transport; Urban Transport of Seville, S. A. M. and Urban Transport of Zaragoza, S. A.

SOURCES

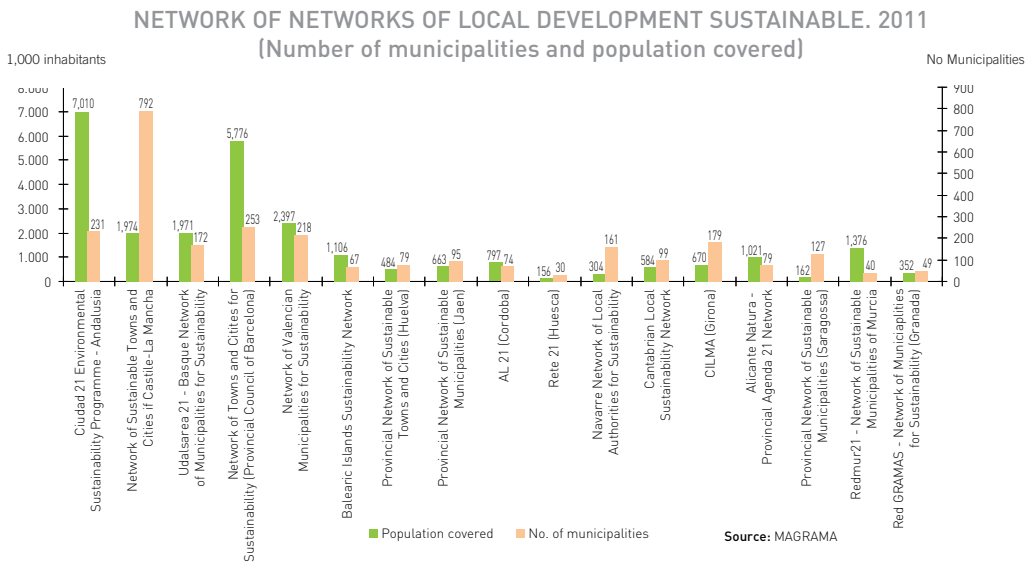
- Ministerio de Fomento, 2011. Statistical yearbook of the year 2010.
- National institute of Statistics, 2012. Statistics of Passengers Transport (TV) . Press release from 9 february 2012.

FURTHER INFORMATION

- [http:// www.fomento.es](http://www.fomento.es)
- <http://www.observatoriomovilidad.es>
- <http://www.transyt.upm.es>
- <http://www.eea.europa.eu/soer/europe/urban-environment/>

Participation by citizens in urban sustainability

The Network of Networks of Local Development Sustainable consolidates with an increase in the number of municipalities participating in the Network



The Network of Networks of Local Sustainable Development is a forum for discussion and exchange of experiences between the various regional networks working in provincial and Local Agenda 21. Its main objective is to promote a concept of compact city, complex, efficient and socially cohesive. The network is a vehicle for public participation in the environment and to the end of 2011 constituted by more than 18 networks (as well as by the Ministry of Agriculture, Food and Environment, the Federación Española de Municipalities and Provinces, the Network Civitas Spain and Portugal and different experts), and was set up by 2.801 municipalities and a population of 28.192.276 inhabitant.

In 2011 the Network “Asturias 21”, which officially constituted in October 2010, joined the Network. It includes 73 municipalities and more than 1.050.000 inhabitants. This regional Network brings together municipalities that have implemented or are in the process of becoming Local Agenda 21 in their territory.

The Strategy of Urban Environment (EMAU), was approved by the Network of Networks of Local Development Sustainable in June 2006. Together with the Green Paper on Urban Environment (in its different progress) and the Spanish Strategy for Sustainable Development (EEDS), adopted in 2007, constitutes a framework of departure for the preparation of the Spanish Urban Sustainability Strategy Local (EESUL), published in 2011. The EESUL is the strategic framework which includes principles, objectives, guidelines and measures to move towards greater sustainability local.

The portal of knowledge “Ecourbano” (www.ecourbano.es), collects projects of practical experiences in the field of urban sustainability, with the technical solutions, rules and regulations, economic, organisational and training that each amendment to its development.

As is set out in the website of the European Commission, the Covenant Mayors ' is the main European movement with the participation of local and regional authorities responsible for the voluntary commitment to improving energy efficiency and use renewable energy sources in their own territory. With this commitment, the signatories of the Covenant have been proposed to achieve the objective of the European Union to reduce by 20% CO₂ emissions before 2020. This is a single initiative which it is mobilizing regional and local actors in respect of the objectives of the EU. For its part, the European institutions define the Mayors Pact as an exceptional model of multilevel governance.

The signatories represent cities from various sizes, from small towns to big cities. Within one year after its accession, the signatories of the Covenant undertake to execute in its territory the Action Plan for Sustainable Energy (PAES).

In Spain, 934 municipalities had signed the Covenant by 2011.

SOURCES

- Ministry of Agriculture, Food and the Environment, 2011. Spanish strategy of Urban Sustainability and Local
- Data provided by the Directorate-general for Quality and Environmental Assessment and Natural Environment. Ministry of Agriculture, Food and Environment.

FURTHER INFORMATION

- <http://www.magrama.gob.es/es/calidad-y-evaluacion-ambiental/temas/movilidad-urbana/desarrollo-medio-am-urb/>
- <http://www.ecourbano.es/index.asp>
- <http://www.sostenibilidad-es.org/es/informes/informes-anauales/sostenibilidad-en-espana-2011>
- http://www.pactodelocalcaldes.eu/index_es.html