Littoralization and Urbanization

Spanish scale

ENI CBCMED
Cooperating across borders in the Mediterranean

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Co-Evolve4BG

Analysis of Threats and Enabling Factors for Sustainable Tourism at Pilot Scale

Littoralization and Urbanization

Spanish scale

UNIVERSIDAD DE MURCIA

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OVERVIEW

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REVIEW

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Abstract

This report aims to identify the main processes of littoralization and urbanization of the Spanish coastal zones. It is developed through the review of existing data at national and regional levels. The document is organized as follows. Section 2 provides an overview of the status and evolution of land occupation in Spain. Section 3 focuses on reporting the trend of demographic evolution in Spain. Section 4 describes the methodology and characteristics of littoralization and urbanization parameters selected in this project.

I. Introduction

Almost everywhere in the world, coastal areas record a clear process of demographic concentration, in which coastal cities play a role of great importance (Barbier et al., 2008; Barragán et al.,2015). In Spain, the coastal zone is configured as one of the most important areas for population and economy. The process, in which people, activities, infrastructures, and facilities are concentrated close to the coast, is known as "littoralization". Coastal areas have suffered significant degradation during the last five decades. The Spanish National Ecosystem Assessment highlights that coastal ecosystems have degraded faster and more intensively than others. Additionally, they identify the main direct drivers of change, such as:

- *Transformation of land use:* this is evident in the extensive development of coastal areas, in the construction of large infrastructures or facilities and the increasingly artificial coastline.
- *External inputs:* identified through diffused pollution by urban and industrial discharges.
- *Intensive exploitation of aquatic ecosystem services*, through catchment of large freshwater sources.

Consequently, a deficient model of management in coastal areas was observed. This reality underlies the urgency to improve the processes of Integrated Coastal Zone Management (ICZM) in Spain. The ICZM Protocol is the main instrument at the basin scale to address littoralization/urbanization. Its article 8 requires the contracting parties to establish a setback zone where construction is not allowed in the first 100 meters from the shore. At the national level, all Mediterranean countries have developed strategies and plans to manage the use of their coastal areas.

II. Status and evolution of land occupation in Spain

Spain has a total area of 50,645,719 ha. Practically 97.5% of the territory corresponds to the peninsular area and the remaining 2.5% is made up of the island groups of the Balearic and Canary Islands, and the autonomous cities of Ceuta and Melilla.

II.1. Distribution of land occupation

Land cover in Spain reflects a predominantly rural landscape (Fig. 1), with almost 50% of agricultural area, the majority (63% of the total agricultural area) corresponding to arable land, permanent crops, and annual crops associated with permanent crops. The second group of agricultural activities presents a percentage of around 37%, including prairies, mosaic of crops, mainly agricultural lands with significant vegetation spaces and agroforestry systems.

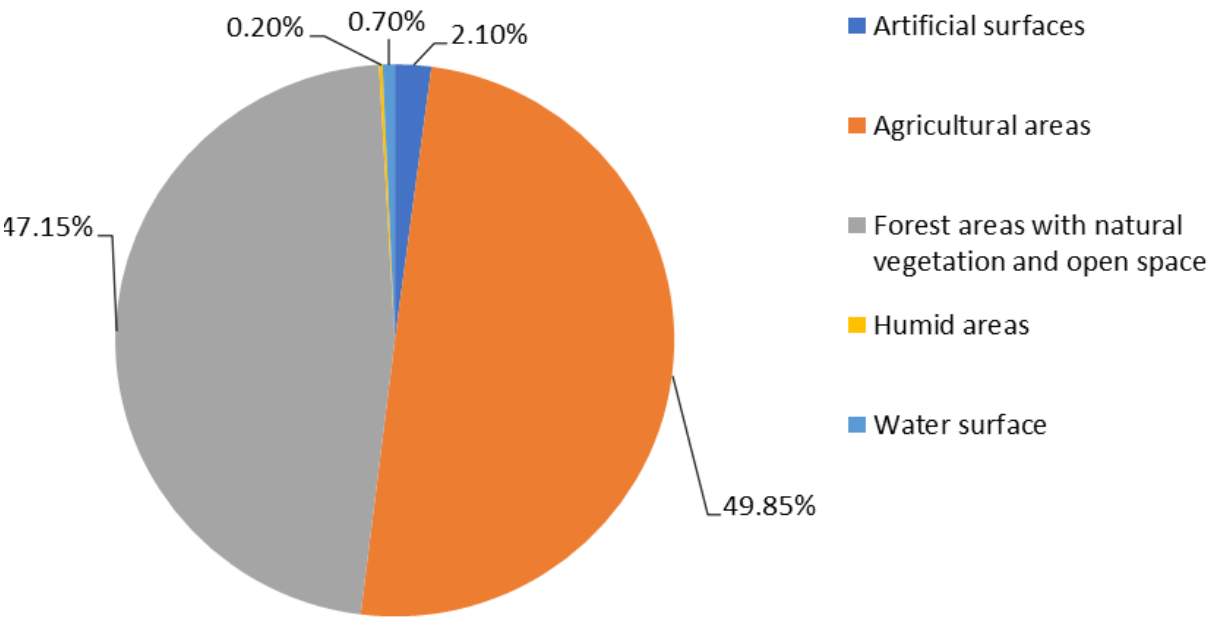

Figure 1. Distribution of the main land cover classes in Spain(Own elaboration based on data of the CORINE Land Cover project for Spain -Ministry of Development, National Geographic Institute)

Forest areas with natural vegetation and open spaces also cover an important part of the territory (47.1%; Fig. 2). These areas are made up of 57% (of the total forest area) of wooded forest areas (LEAC), 37% of bare forest (LEAC), and 5% of open spaces with little or no vegetation. Despite the low percentage of the latter classes, their size in absolute numbers is relevant. Indeed, considering that the low density of

vegetation cover is a risk factor for soil erosion, these spaces require special attention since the loss of soil is a normally irreversible process with impacts that go beyond the area directly affected. This phenomenon is accentuated, as in many cases, open spaces with little or no vegetation are found in degraded marginal lands, and in extreme cases, they can suffer a process of desertification. The rest of the territory is distributed between artificial surfaces (2.1%), humid areas, and water surfaces (0.9%; Fig. 1), to which reservoirs contribute significantly.

II.2. Changes in land use

The evolution of the main changes in land occupation is reflected in Table 1, where it is observed that the greatest increase compared to 1987 corresponds to artificial surfaces (29.5%) followed by water surfaces (10.4%), with other occupations remaining practically stable, although forest areas with natural vegetation and open spaces decrease by 1% (CORINE Land Cover project for Spain, Ministry of Development, National Geographic Institute).

Table 1. Evolution of the main changes in occupation soil in Spain. Own elaboration based on data from the CORINE Land Cover project for Spain (Ministry of Development, National Geographic Institute)

Coverage	Surface 2000 (ha)	Net change	
		Surface (ha)	% of 1987
Artificial surfaces	1,054,316	240,166	29.5
Agricultural areas	25,250,301	22,490	0.1
Forest areas with vegetation and open spaces	23,878,127	250,783	1
Wetlands	112,326	1,567	1.4
Water surfaces	350,649	33,193	10.4
TOTAL	50,645,719		

This global image of Spain, however, does not reflect its heterogeneity in terms of spatial distribution in the territory. Broadly speaking, urban areas are concentrated on the coast, especially in the Mediterranean, and in some inland urban areas, such as Madrid, Zaragoza, Seville, Valladolid, etc. in which, except for Madrid, one of the great peninsular rivers is always present. Thus, despite the low percentage of inland waters in Spain as a whole, its concentration in certain areas of the territory has an important effect because of what it means to be a pole of attraction for the population and related economic activities (Fig.2). The relief largely shapes the distribution of agricultural and forest areas. Thus, the coastal plains and the extensive plains, associated with river valleys such as the Ebro, the Duero, or the Guadalquivir and La Mancha, are suitable for agriculture.

Figure 2. Spatial distribution of artificial surfaces in Spain (Own elaboration based on data of the CORINE Land Cover project for Spain -Ministry of Development, National Geographic Institute)

Regarding the analysis of the structural changes produced in the territory, a fundamental question to consider is the relationship of these changes with the application of policies from the EU. For the last few years, Spain was already a member state of the European Economic Community (EEC), therefore, the application of policies from Europe has influenced this evolution. Although most of the policies do not have, in principle, direct action or objectives related to the territory, the reality is quite different, since issues such as the type of cultivation in agriculture, the creation or improvement of infrastructures, the increase of urbanization processes, the protection of natural spaces, etc, are related to the initiatives established by the Union, such as the Regional Policy, the Common Agricultural Policy (PAC), and the Environmental Policy, among others.

II.3. Artificial surfaces

Practically all the new artificial surfaces have been created from other land covers (agricultural areas and mostly forest areas), while the transformation of other soils has taken place through internal reconversions within the same classes. Artificial surfaces represent a small percentage in the whole of Spain (2.1%). In the internal breakdown of

this class, 63% is made up of urban areas, followed by industrial or commercial areas (12%). The area occupied by transport-related infrastructure (11%) is in the same order as the mining extraction areas, landfills, and areas under construction (Fig. 3) (CORINE Land Cover project for Spain, Ministry of Development and National Geographic Institute).

Artificial surfaces have grown by 240,166 ha until 2000, which represents a relative increase of 29.5%. This growth, one of the highest in Europe, has affected the entire territory globally, although it has been concentrated on the Mediterranean coast and around large and medium cities, particularly in the case of the Madrid metropolitan area for the magnitude and speed of changes. Spatial segregation reflects the confluence of various factors that have acted as a driving force in this process, such as the dynamics of the construction sector, new urban developments, largely dispersed, the increase in second homes, strong investment in infrastructure, and tourism, among others, in a context of strong economic development.

Regarding the increase in surface area, most of it has been due to the growth of urban areas (80,182 ha), and secondly to transport networks, ports, and airports (57,588 ha; Fig. 4). The increase in transport-related infrastructure is precisely quite high compared to the European average. It should be noted that significant amounts of European structural funds have been received during this period for the creation of transport infrastructure. The industrial or commercial zones have grown by 48,077 ha.

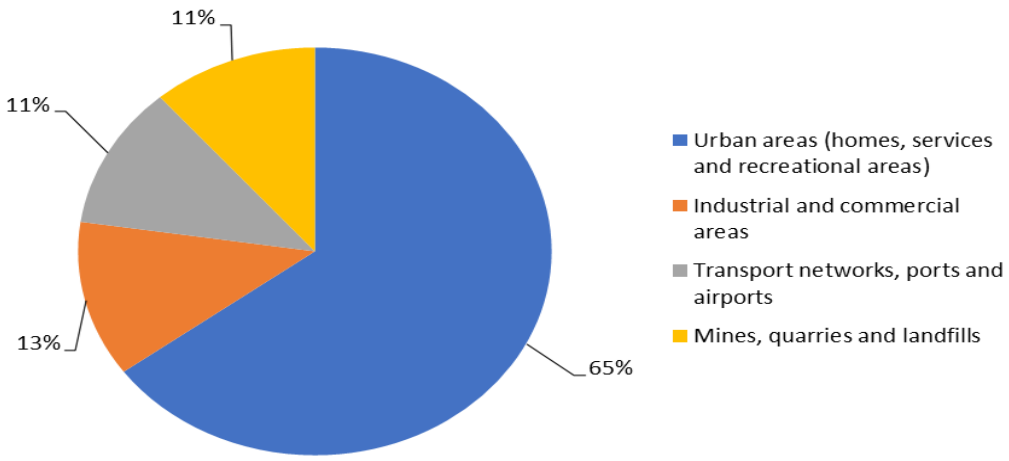

Figure 3. Distribution of the classes of artificial surfaces in Spain(Own elaboration based on data of the CORINE Land Cover project for Spain -Ministry of Development, National Geographic Institute)

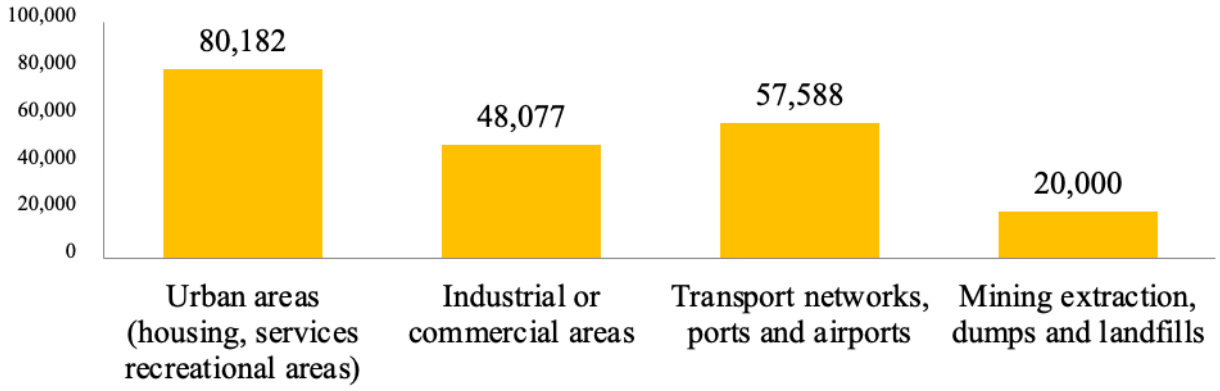

Figure 4. Destination of the new artificial areas in ha(Own elaboration based on data of the CORINE Land Cover project for Spain -Ministry of Development, National Geographic Institute)

Almost half of the new artificial surface (46%) has been developed on agricultural land, at a rate of 12,435 ha per year. This transformation is determined by several reasons:

- the location of urban centers in plains and fertile areas,
- the largest area occupied by agricultural area,
- and the higher profitability obtained from the change of activity.

Most of the crops affected correspond to rainfed arable land (35%), followed by mosaic crops (21%) and permanently irrigated land (13%). An important part of the artificialization has occurred in areas covered by grasslands (20,879 ha) and sclerophyllous vegetation (18,557 ha) and in forests (14,854 ha). This sequence is logical since natural areas constitute the second dominant type of roof. Part of the bushes affected corresponds to old, abandoned crops or degraded areas.

II.4. The urbanization on the coast

The Spanish coast is very diverse from many points of view. Leaving aside the obvious differences related to the geo-climatic aspects that exist between the Cantabrian coast and the Mediterranean, the socioeconomic aspects linked to the productive structures of each area, as well as the different demographic patterns, among other factors, make the Spanish coast a reality of complex analysis. This diversity influences and has historically had a decisive influence on land use patterns and, consequently, on the different urban growth models that have been developed in it. The intensive urbanization processes that the coastline has undergone in recent decades have decisively transformed the landscape of this area, especially the nearest area to the coastline (Fig. 5). Clear proof of this is the high percentages of urbanization on the Alicante Costa Blanca, the Costa del Sol, the Barcelona coastline, or the Tarragona coastline, in all cases higher than 30%.

A similar process takes place on the second line of the coastline (1-10 km), where although with significantly lower percentages, urban pressure also deserves attention (Fig. 6). In general terms, the provinces (NUT 3 level) on the Mediterranean coast are those that offer the highest percentages of urbanization, both in the first kilometers from the coastline, and within the first 10 kilometers. Special mention should be made of the autonomous cities of Ceuta and Melilla due to their geopolitical conditions and their reduced territorial extension.

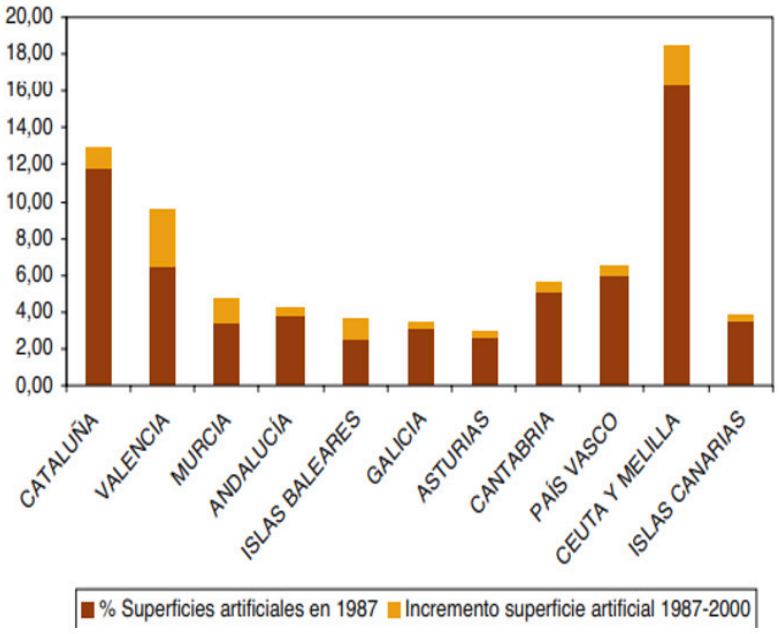

Figure 5. Percentage of artificial surfaces in the first kilometer of coastline (brown) and increase in the period until 2000 (yellow)(Own elaboration based on data of the CORINE Land Cover project for Spain -Ministry of Development, National Geographic Institute)

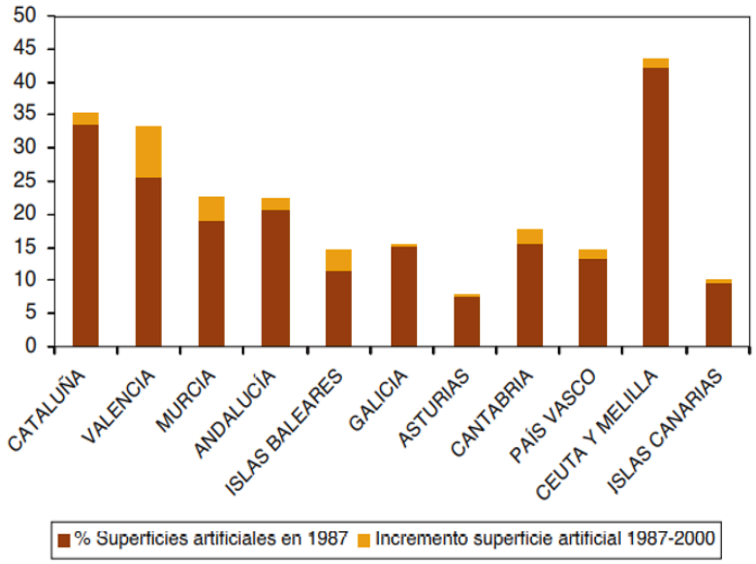

Figure 6. Percentage of artificial surfaces in the 1-10 kilometers of coastline (brown) and increase in the period until 2000 (yellow) (Own elaboration based on data of the CORINE Land Cover project for Spain -Ministry of Development, National Geographic Institute)

This increase in the urbanized area on the coast that began in the mid-sixties, with the boom in mass tourism in our country, has undergone a significant rebound during the 1987-2000 periods, associated with the massive development of second homes and the proliferation of new tourist complexes, especially in the east of the peninsula. Consequently, we are currently facing a growth in the stock of new homes and establishments, with the important socio-spatial impacts that it entails (Guaita et al. 2008).

The small coastal towns have in many cases become cities with a high seasonality in their number of inhabitants, causing significant stress on the environment.

The location of secondary residences and tourist complexes on the coast is closely related to the recreational possibilities offered by this space. This relationship is reinforced when we find the coastline and the warmth of the climate mixed, as occurs in the Mediterranean area. This, in part, explains the lesser force of the phenomenon on the Cantabrian and Galician coasts, which generally have lower percentages of urbanization and lower urban growth rates (in the first kilometers below 15% in the most provinces).

Despite the legislative efforts made by various administrations to curb this growth, reality goes beyond, in many cases, the public powers and, in this way, the need for comprehensive management of the urban planning of these spaces becomes clear, to achieve a coherent and sustainable occupation of the territory.

III. Demographic evolution in Spain

During the first two decades of the 21st century, the demographic dynamics of Spain presented several contrasting trends (National Institute of Statistics):

- A first period that lasts until 2009 with strong increases (between 1.13% and 2.12% annually).
- A second period from 2009 to 2012 in which the positive dynamics continues, although each time with more moderate values.
- From 2012 to 2016, the dynamics reverted their positive trend and the population volume decreased every year, with a joint loss of more than 700,000 inhabitants.
- The last period from 2016 to 2018 the dynamics is positive again. In the 2017-2018 stretch, the population has grown again with an increase of 0.32%. This data is significant, since, although the growth is very small, it consolidates the change in the trend (Fig. 7).

During 2019, the population grew in 14 autonomous communities and decreased in the remaining three. The largest increases in relative terms occurred in Balearic Islands (1.90%), Madrid Municipality (1.59%), and Canarias (1.38%). At the other extreme, the most pronounced population decline was in Extremadura and Principado de Asturias (both with -0.34%) and Castilla y León (-0.27%; Fig. 8).

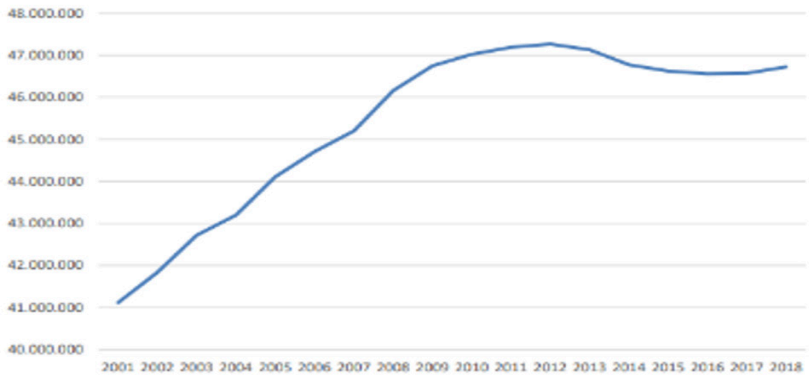

Figure 7. Population evolution in Spain 2001-2018 (millions)
(National Institute of Statistics)

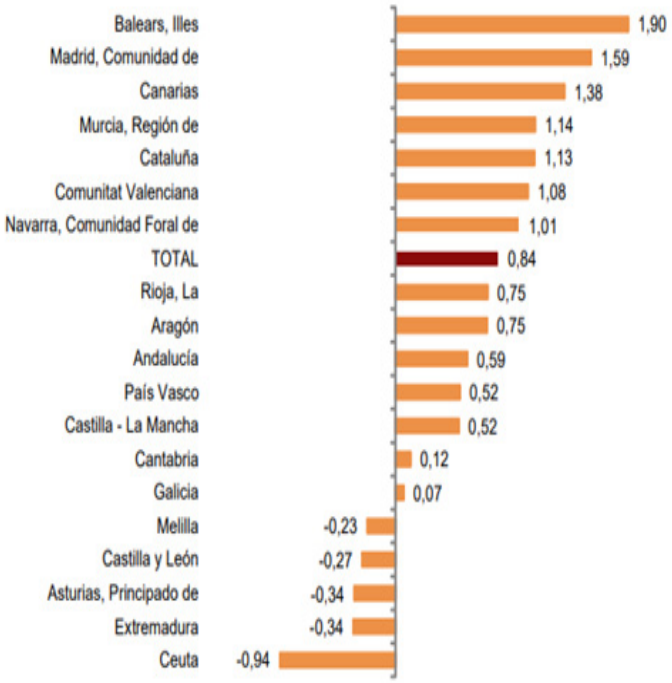

Figure 8. Relative population growth (percentage) by Autonomous Communities, the Year 2019(National Institute of Statistics)

Until the seventeenth century the most populated areas of Spain had been the North and the Levant, coinciding with the areas that were recovered in the first Reconquest historic processes (10th-14th centuries). However, from the 18th century on, the Spanish population underwent a process of "centrifugation", settling in coastal areas, preferred by suitable climates for agriculture (low thermal amplitude, mild temperatures) and by a coastal situation that favored communications and, with this, the development of secondary and tertiary activities.

These conditions are those that favor that, throughout the 19th and 20th centuries, it is the coastal regions that register a process of industrialization (in the case of Catalonia, Asturias, and the Basque Country), accentuating the process of emptying the interior, especially with the massive rural exodus of the years of Franco's "dictatorship developmentalism". The development of tourism also contributed to this massive rural exodus, which was concentrated on the Mediterranean coast and the Balearic and Canary archipelagos (Fig. 9).

Starting from the 1970s, the north-western coast entered a reconversion crisis, concentrating economic development on the Mediterranean coast and the Ebro axis, concentrating most of the population there. Madrid has been the main exception to the emptying of the interior of the peninsula, favored by its capital status and by constituting the center of the radial transport network.

The distribution of the Spanish population is marked by inequality. The average density is 92.8 inhabitants/km^2, with provincial values ranging from around 800 in Madrid to 10 in Soria. At a general level, metropolitan regions exceed 500 inhabitants/km^2, coastal areas exceed 100 and in interior provinces, they are below 20. These strong inequalities cause problems of overcrowding in the most populated areas and depopulation in the interior (Fig. 10).

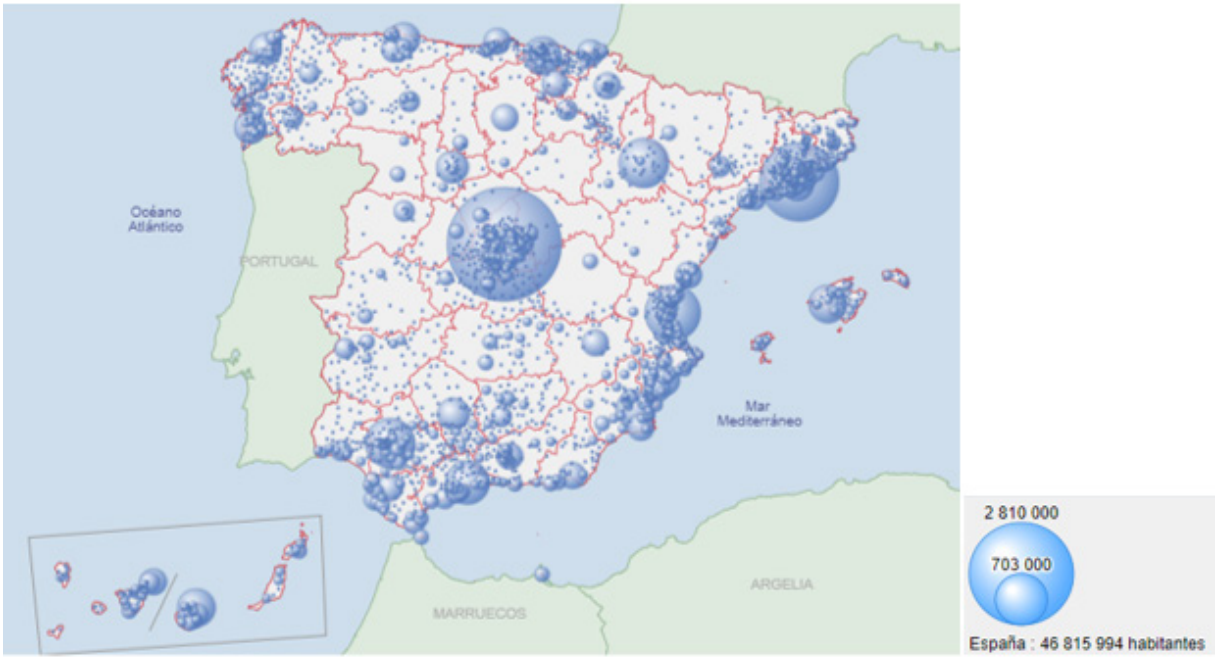

Figure 9. Population (inhabitants)(Population and Housing Center, National Institute of Statistics. Statistical Atlas of Urban Areas in Spain, 2019-Ministry of Residence)

Figure 10. Population density (inhab/km²)(Population and Housing Center, National Institute of Statistics. I Atlas of Urban Areas in Spain, 2019-Ministry of Residence)

According to the census in 2019, Spain had about 47,157,822 inhabitants. The total surface area of the country is 505,992 km². This translated to a population density of about 92.8 inhabitants per km². The population density is lower than that of most other Western European Countries. Except for Madrid, the capital of Spain, the populous regions in Spain are along the coastline of the country.

Spain has a high rate of people living in urban areas and as such several sizable cities. The two largest are Madrid and Barcelona, which have populations of 6,155,116 and 5,179,243 inhabitants respectively. Other notable large cities are Valencia, Seville, Bilbao, and Malaga - all of which have populations slightly above or below one million.

The highest density of family residences is observed on the Spanish coast as well as in the capital, Madrid, and some cities such as Zaragoza. An important rate of family residence per km² can be observed in the Region of Murcia as well as on the Alicante and Valencia coasts (Fig. 11).Figure 12shows the highest concentration of residences per hectare appears in Andalusia and the Region of Murcia. These two communities are very crowded due to the search for good weather and the Mediterranean coast.

Figure 11. The density of family residences (residence/km^2) (National Institute of Statistics. Statistical Atlas of Urban Areas in Spain, 2019-Ministry of Residence)

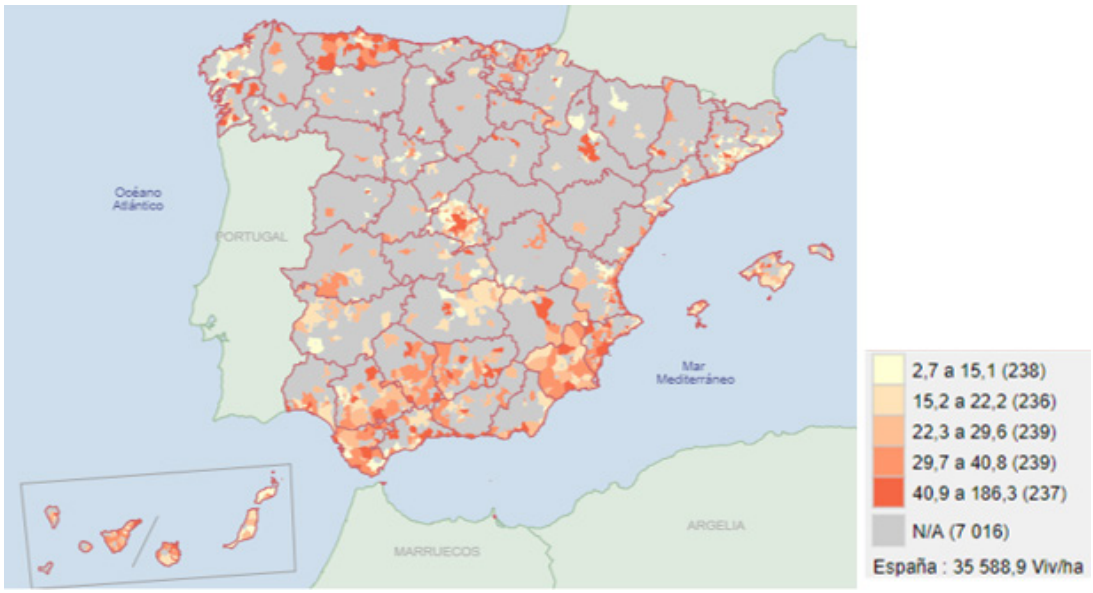

Figure 12. Housing density per urban land area (residence/ha)(Population and Housing Center, National Institute of Statistics. Statistical Atlas of Urban Areas in Spain, 2019-Ministry of Residence)

IV. Littoralization and urbanization parameters

IV.1. GIS database

Geographic Information System (GIS) is applied to computer systems aimed at managing spatial data that visually allow us to analyze, manage and interpret geographic data. The methodology of this study has consisted of searching and processing shapefile layers and their subsequent analysis of GIS. Shapefile layers have been downloaded from official national statistical platforms (Ministry of Ecological Transition and Demographic Challenge, MITECO, 2021) and European platforms such as the European Marine Observation and Data Network (EMODnet, 2021).

The Spatial Reference System has the ETRS89 datum with UTM projection in the 30 North Zone, with EPSG code: 25830. In addition, they are based on official statistical platforms or rigorous studies, which guarantee the soundness of the information expressed. The GIS results were expressed by NUTS administrative boundaries from the EU (EUROSTAT https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/ks-gq-20-092, 2021). The NUTS classification subdivides the economic territory of the EU Member States into territorial units (regions; Fig. 13).

The classification is made up of three hierarchical levels: each Member State and the UK are divided into NUTS 1 regions, which in turn are subdivided into NUTS 2 regions and then further divided into NUTS 3 regions. Each of these regions is allocated a specific code and name. Since several different regions within Europe have the same name, a distinction has been made by adding to each of these the abbreviation for the country concerned.

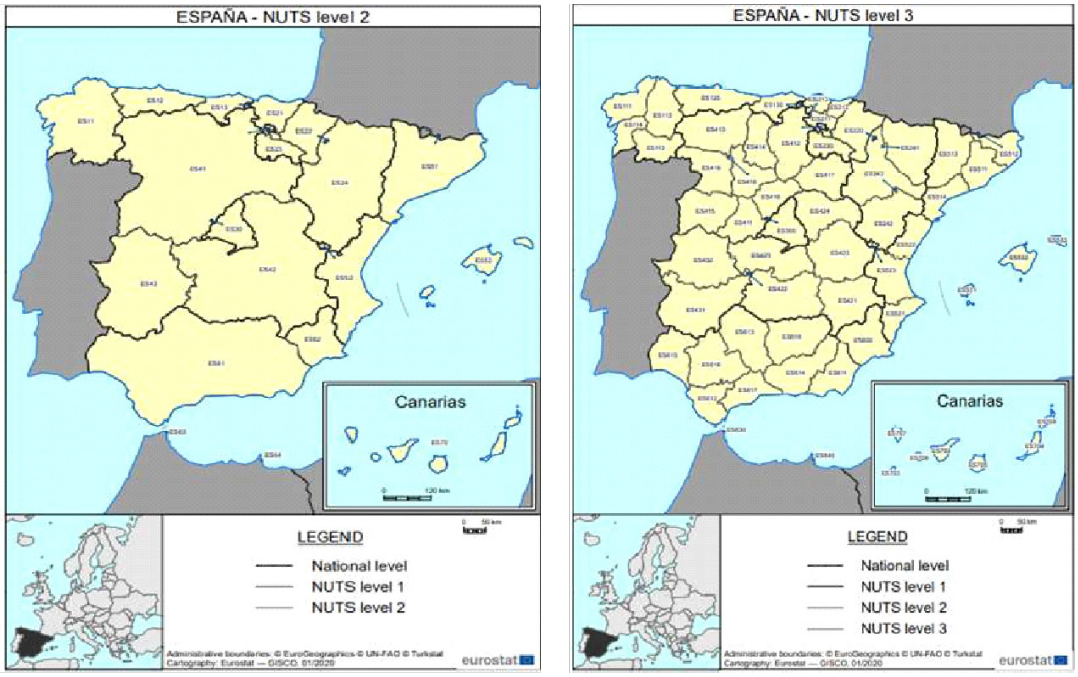

Figure 13. Spain (España): NUTS levels 2 and 3 (EUROSTAT (2021)

IV.2. Data Records

This report includes a CSV file with all the information at the Nuts 3 level in the repository. The database will be updated and expanded as new and improved data become available. The database presented here has been created using several publicly available datasets, which are thoroughly documented and described in reports or scientific articles. Thus, these datasets have undergone rigorous quality controls and/or validation. In addition, for those parameters where consistent information for the studied area did not exist, new datasets were generated.

IV.3. Littoralization and Urbanization parameters

A panel of external experts and the working group at the Mediterranean level of the Co-Evolve4BG project has selected the following parameters of Climate Change and morphological stability, which will be analyzed on the National and Mediterranean scales (Table 2). The supplementary material is located in the excel table with the parameter values selected at the level of Spain.

Table 2. Littoralization and Urbanization parameters

Parameters	Variable	Description	Source
Urban Population 2014 (UP2014) and 2020 (UP2020)	No. inhabitants	Number of people living in urban areas between 2014 and 2020	Instituto Nacional de Estadística https://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica_P&cid=1254735570703
Total population 2020 (TP2020)	No. inhabitants	Number of total people living in urban areas during 2020	Instituto Nacional de Estadística https://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica_P&cid=1254735570703
Urban Population Growth (2014-2020)	%	Percentage calculated from [(UP2020-UP2014)/UP2014] *100	Instituto Nacional de Estadística https://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica_P&cid=1254735570703
Urban Population	%	Percentage calculated from [UP2020/TP2020] *100	Instituto Nacional de Estadística https://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica_P&cid=1254735570703
Urban Area 2014(UA2014) and 2020 (UA2020)	ha	Size of urban areas during 2014 and 2020	Instituto Nacional de Estadística https://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica_P&cid=1254735570703
Urban growth	%	Percentage calculated from [(UA2020-UA2014)/UA2014] *100	Instituto Nacional de Estadística https://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica_P&cid=1254735570703
Total Area 2020 (TA2020)	ha	The total area of the region during 2020	Instituto Nacional de Estadística https://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica_P&cid=1254735570703
Urbanization 2020	%	UA2020/TA2020	Instituto Nacional de Estadística https://www.ine.es/dyngs/INEbase/es/categoria.htm?c=Estadistica_P&cid=1254735570703

V. Conclusions

The main conclusions of this work are:

- The main changes in land occupation from 1987 correspond with an increase in artificial Surfaces (29.5%) followed by water surfaces (10.4%), while forest areas with natural vegetation show a decrease (1%).
- The growth of artificial, one of the highest in Europe, has affected the entire territory globally, although it has been concentrated on the Mediterranean coast and around large and medium cities.
- According to the census in 2019, Spain had about 47,157,822 inhabitants. The total surface area of this country is 505,992 km^2. This translated to a population density of about 92.8 people per km^2. The population density is lower than that of most other Western European Countries.
- Spain has a high rate of people living in coastal urban populations, except in Madrid with 6,155,116 people. The highest density of family residences is observed on the Spanish coast as well as in the capital, Madrid, and some cities such as Zaragoza. An important rate of family residence per km^2 can be observed in the Region of Murcia as well as on Alicante and Valencia coasts.
- The development of tourism also contributed to this massive rural exodus, which was concentrated on the Mediterranean coast and the Balearic and Canary Islands.

VI. References

ÁreasUrbanas en España, 2019. Ministerio de Transportes, Movilidad y Agenda Urbana, Dirección General de Vivienda y Suelo. Availableat:https://www.mitma.gob.es/AtlasAU/ [accessed 14/04/2021].

Asociación de EducaciónAmbiental y delConsumidor (ADEAC), availableat:http://www.adeac.es/ [accessed 14/04/2021].

Barbier E.B., Koch E.W., Silliman B.R., Hacker S.D., Wolanski E., Primavera J., Reed D.J., 2008. Coastal ecosystem-based management with nonlinear ecological functions and values. Science, 319: 321-323.

Barometer of the Image of Spain, 2018. available at:http://www.realinstitutoelcano.org/wps/portal/rielcano_en/publications/barometer-rielcano/[accessed 14/04/2021].

Barragán J.M., 2014. Política, gestión y litoral. Una nuevavisión de la gestiónintegrada de áreaslitorales. Madrid: Tebar, UNESCO.

Co-Evolve, available at: https://co-evolve.interreg-med.eu/ [accessed 07/02/2021].

CORINE Land Cover, available at: https://www.mapa.gob.es/es/desarrollo-rural/planes-y-estrategias/informacion-territorial/mapa-de-ocupacion-del-suelo-corine-/default2010-11-11_20.53.58.7639.aspx [accessed 15/04/2021].

Andrés M., Barragán J.M., Sanabria J.G., 2017. Relationships between coastal urbanization and ecosystems in Spain. Cities, 68: 8-17.

EMODNET, available at: https://emodnet.eu/e[accessed 25/01/2021].

Erasmus+, available at: https://ec.europa.eu/programmes/erasmus-plus/node_es/ [accessed 14/04/2021].

European Foundation for Environmental Education, available at: https://www.fee.global//[accessed 14/04/2021].

EUROSTAT, available at: https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/ks-gq-20-92 [accessed 25/01/2021].

Gastronomy in the Spanish economy compiled by KPMG in 2019, available at: https://home.kpmg/es/es/home/sala-de-prensa/notas-de-prensa/2019/[accessed 14/04/2021].

Guaita N., López I., Prieto F., 2008. Cambios de ocupacióndelsuelo en España:implicaciones para la sostenibilidad. Ciudad Y TerritorioEstudiosTerritoriales (CyTET), 40: 235-259.

Heritage of Humanity by UNESCO, available at: https://ich.unesco.org/en/lists/ [accessed 14/04/2021].

Ministry of Ecological Transition and Demographic Challenge (MITECO) https://www.miteco.gob.es/en/[accessed 14/04/2021].

National Statistics Institute (INE), available at: https://www.ine.es/en/[accessed 14/04/2021].

Santonocito S.D., 2009. Sustainable tourism and carrying capacity in the Mediterranean area focus on Sicily. In 3rd IRT International scientific conference (Vol. 1).

Travel and Tourism Competitiveness Report for 2017, available at: https://www.weforum.org/reports/the-travel-tourism-competitiveness-report-2017/[accessed 14/04/2021].

UNWTO Tourism Highlights, from 2018, available at: https://www.e-unwto.org/doi/pdf/10.18111/9789284419876/ [accessed 14/04/2021].

US News & World Report, available at: https://www.usnews.com/rankings/[accessed 14/04/2021].

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