

## Territorial Portrait of Portugal 2019 Edition

### Territorial diversity in Portugal

Statistics Portugal releases the sixth edition of the Territorial Portrait of Portugal focusing on the analysis of Portuguese territorial dynamics regarding the domains of *Territorial qualification*, *Quality of life and cohesion* and *Growth and competitiveness* that, in this edition, deals, respectively, with the following topics: ***The territorial diversity of land use and land cover***, ***The territorial accessibility to education***, and ***The territorial differentiation of the housing market***.

This press release, presents, for illustrative purposes, some of the results of the three themes analysed in this edition of the Territorial Portrait of Portugal.

The Territorial Portrait of Portugal aims to promote, from an analytical perspective, the territorial-based statistical information made available by the National Statistical System.

In this edition, in the *Territorial qualification* domain, an analysis on *The territorial diversity of land use and land cover* is presented, based on statistical information from Land Use and Land Cover Statistics, which highlights the framework of changes in land cover and presents the indicators associated with the 2030 Sustainable Development Agenda calculated on the basis of this information.



In the *Quality of life and cohesion* domain, *The territorial accessibility to education* is analysed, mainly using information from the Annual Estimates of Resident Population, to present the main dynamics of the school-age population, and from the Directorate-General for Education and Science Statistics for the characterisation of school performance and the evolution of the education network, highlighting the experimental statistics with metrics of territorial and population accessibility to educational institutions.

In the *Growth and competitiveness* domain, *The territorial differentiation of the housing market* is discussed, using the results of several statistical operations to frame the structural and short-term factors associated with the recent dynamics of this market, and the results of the Statistics on prices, rents and income at the local level for the analysis of the values practiced and the potential access of households to the renting and housing purchase market.

The full publication, statistical data and corresponding figures analysed in this edition are available at [www.ine.pt](http://www.ine.pt), under the option Statistical Information, Publications.

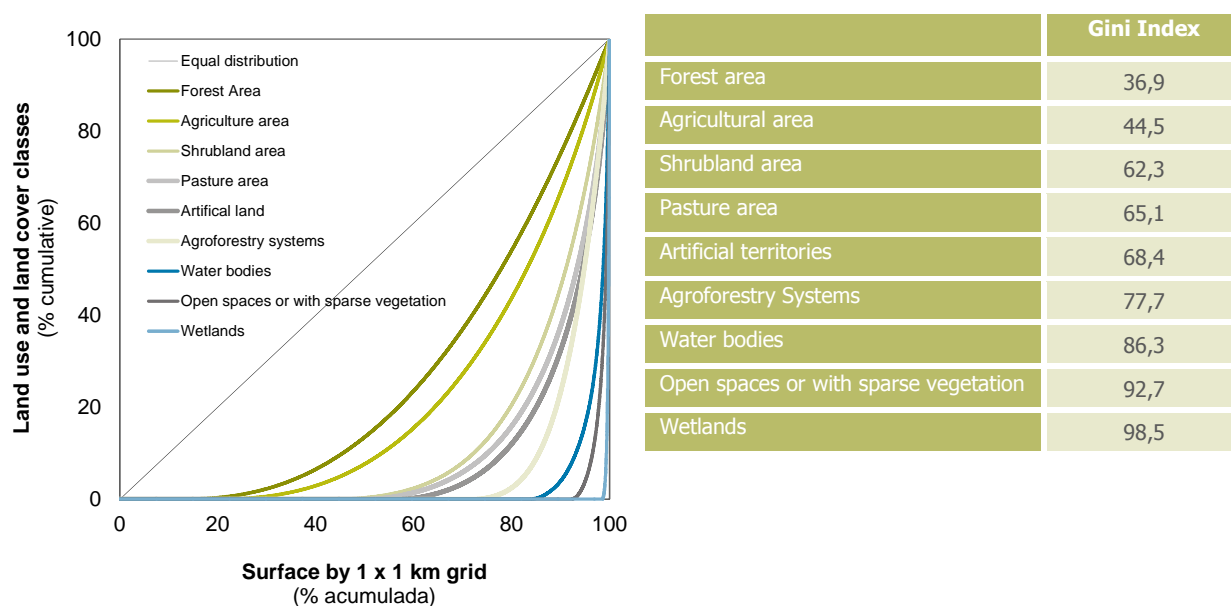
## I. The territorial diversity of land use and land cover

Based on statistical information from Land Use and Land Cover Statistics, the analysis on *The territorial diversity of land use and land cover* highlights the framework of changes in land cover and presents the indicators associated with the 2030 Sustainable Development Agenda calculated on the basis of this information.

*The main land use and land cover classes in mainland Portugal presented in 2015 different levels of territorial concentration, with the forest and agricultural areas showing the lowest degree of concentration*

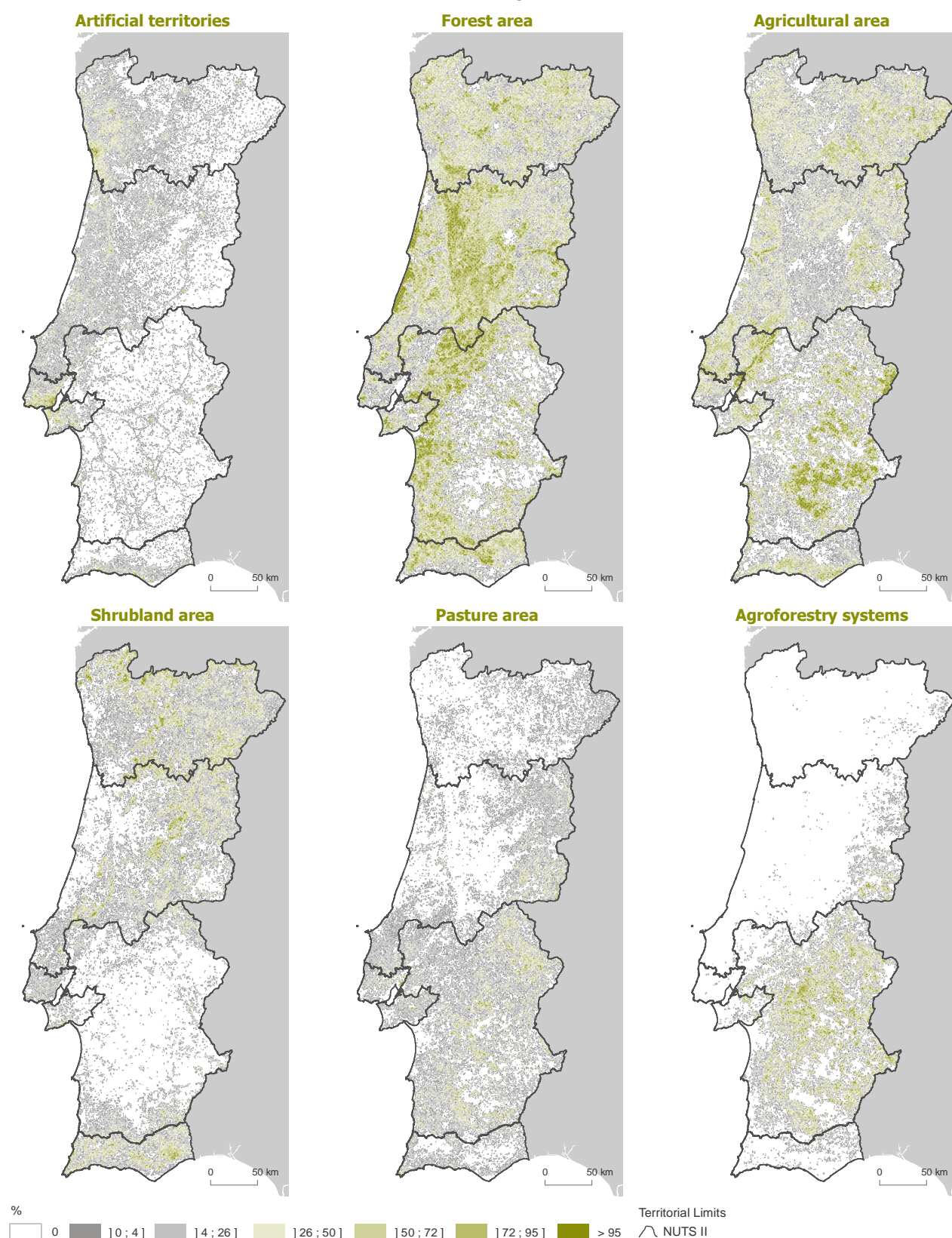
In 2015, the nine main classes of land use and land cover presented different concentration patterns. Concentration was more intense in classes of land use and land cover that occupied less land area, such as wetlands, open spaces or with sparse vegetation and water bodies, and less intense in relation to classes of land use and land cover that occupied a larger area of mainland Portugal, such as forest areas and agricultural areas.

**Figure 1 Lorenz concentration curves and Gini index based on the distribution of the area occupied by land use and land cover classes in relation to the total area by 1 x 1 km grid cells, 2015**



Source: Statistics Portugal/Directorate-General for Territory, Land use and land cover statistics.

**Figure 2 Distribution of the surface area of territorial units by land use and land cover classes and by 1 x 1 km grid cells, mainland Portugal, 2015**



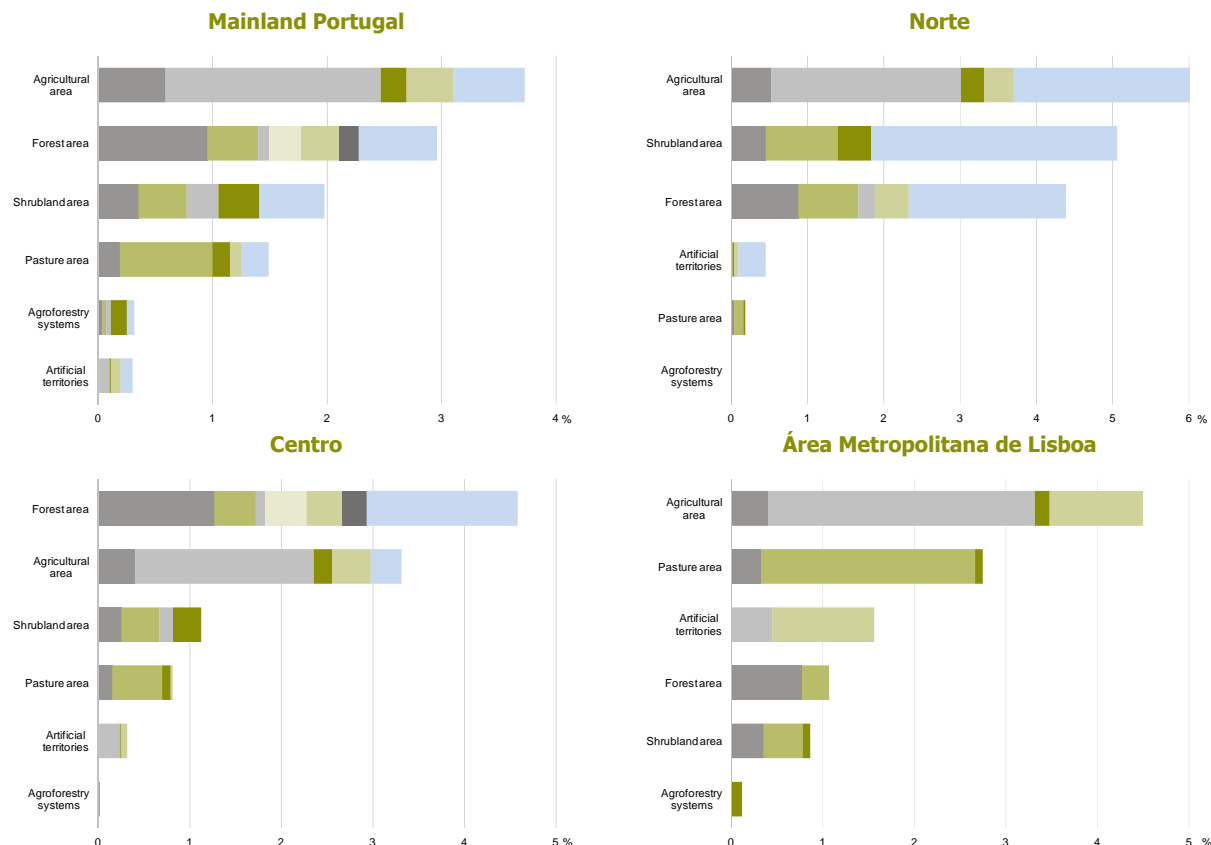
Source: Statistics Portugal/Directorate-General for Territory, Land use and land cover statistics.

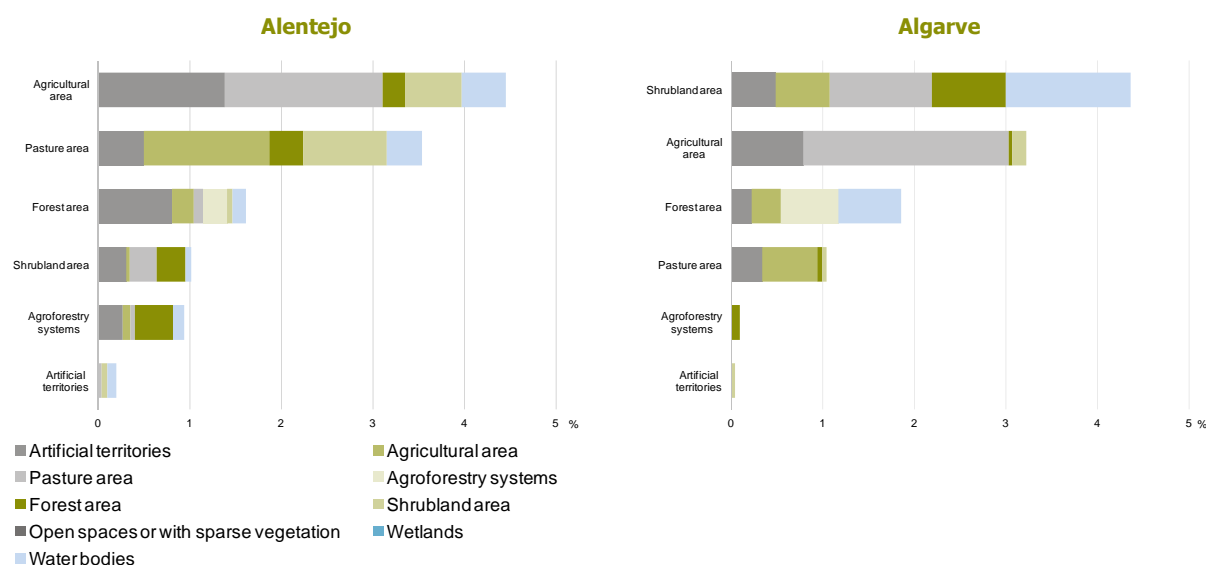
*The main surface area transitions between classes resulted from the conversion of agricultural and forest areas to other land use and land cover classes*

The analysis of the indicator relating to the proportion of surface area transitions between land use and land cover showed that the main surface transitions were the result of the conversion of the territory occupied in 2010 by agricultural and forest areas. For mainland Portugal, the proportion of surface area occupied by these classes in 2010 that moved to other land use and land cover classes in 2015 was 3.7% and 3.0%, respectively. The conversion of agricultural areas resulted mainly in new pasture areas, water bodies, artificial territories and shrubland areas. The conversion of forest areas resulted mainly in artificial territories, water bodies, agricultural areas and shrubland areas.

By region, the following results stand out: i) in the Norte region, surface area transitions were mainly related to the conversion of agricultural (6.1%), shrubland (5.1%) and forest (4.4%) areas; ii) in the Centro region the proportion of surface area transitions regarding forests (4.6%) and agricultural areas (3.3%) stands out; iii) in the Área Metropolitana de Lisboa the proportion of surface area transitions regarding agricultural areas (4.5%) stood out, mainly to new pasture areas; iv) in the Alentejo region, agricultural areas and pasture areas had the highest proportion of areas that changed to other classes, 4.5% and 3.5%, respectively; and v) in the Algarve region, the conversion of 4.4% of the shrubland areas into new water bodies, pasture areas, forest and agricultural areas and artificial territories stands out.

**Figure 3 Proportion of surface area transitions between land use and land cover classes, Mainland Portugal and NUTS 2, 2015**





Source: Statistics Portugal/Directorate-General for Territory, Land use and land cover statistics.

## II. The territorial accessibility to education

In the analysis of *The territorial accessibility to education*, the main sources information are from the Annual Estimates of Resident Population to analyse the main dynamics of the school-age population, and from the Directorate-General for Education and Science Statistics to characterise school performance and the evolution of the education network, highlighting the experimental statistics with metrics of territorial and population accessibility to educational institutions.

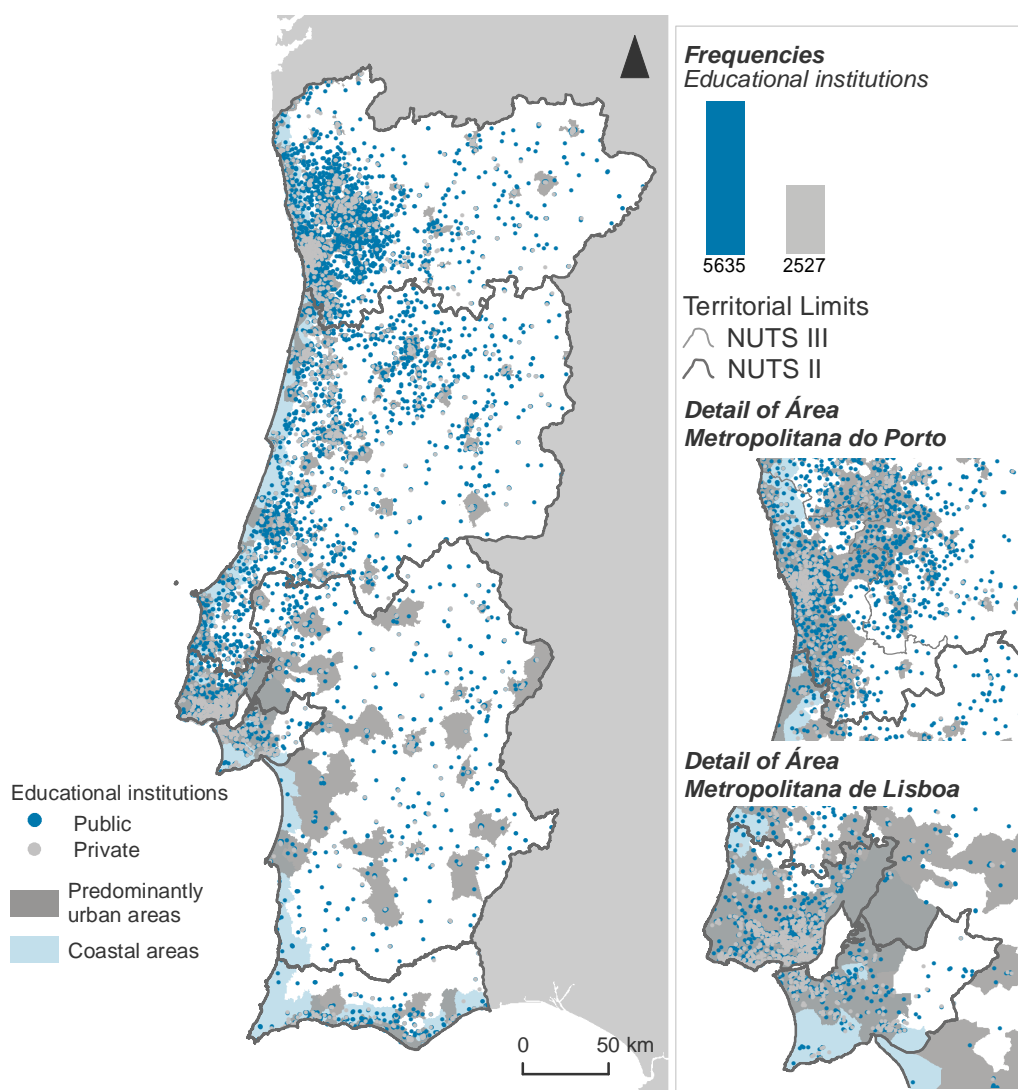
*In Portugal, between the 1999/2000 and 2016/2017 school years, in a context of a decrease in the total number of non-tertiary educational institutions, private educational institutions increased from 15% to 31% in the same period*

Between the 1999/2000 and 2016/2017 school years, the total number of non-tertiary educational institutions decreased from 17 351 to 8 584 in Portugal. The decrease in the number of public educational institutions was followed by a slight increase in the number of private educational institutions. In 1999/2000, private educational institutions accounted for 15% while in the 2016/2017 school year they accounted for 31% of the total number of educational institutions.

The territorial pattern of non-tertiary educational institutions in 2016/2017 shows a concentration on the coastal area mainland Portugal, with special emphasis on metropolitan areas, which follows the pattern of population distribution. At the same time, there is a greater offer of private non-tertiary educational institutions in these territories, and public educational institutions had a greater territorial coverage than private institutions.



**Figure 4 Non-tertiary educational institutions by nature of institution, mainland Portugal, 2016/2017 school year**



Source: Ministry of Education and Ministry of Science, Technology and Higher Education - Directorate-General for Education and Science Statistics.

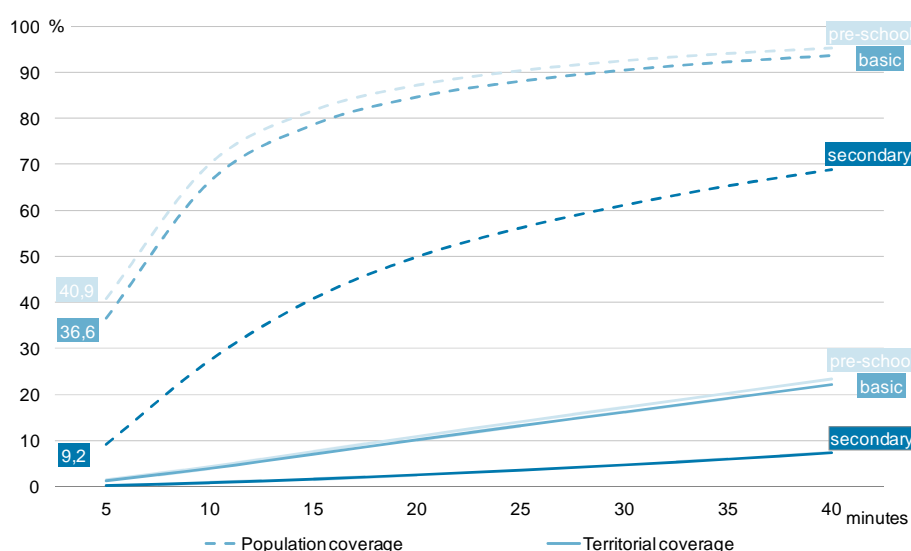
Based on the calculation of service areas on foot to non-tertiary educational institutions, accessibility indicators were estimated, characterizing territorial units according to the level of territorial and population coverage.

These experimental measures of coverage were calculated by considering the walking distances from the location of the non-tertiary educational institutions of the 2016/2017 school year, by education level, based on isochrons of time defined between 5 and 40 minutes with intervals of 5 minutes. Taking into account that the operationalization of the population coverage indicator requires the availability of georeferenced resident population, information from the 2011 Population and Housing Census (2011 Census) was used.

*In mainland Portugal, 81.7% of the population aged 3 to 5 years (2011 Census) lived in 15 minutes walking distance from a pre-school, 84.7% of the population aged 6 to 14 years was 20 minutes from a basic school and 56.2% of the population aged 15 to 17 years was 25 minutes from a secondary school*

The territorial coverage indicator showed that 7.6% of the surface area of mainland Portugal was in 15 minutes walking distance from a pre-school, 10.2% was in 20 minutes from a basic school and finally 3.6% of the surface area was in 25 minutes from a secondary school. However, considering the population coverage rate in mainland Portugal - based on the 2011 Census population distribution - there were substantially higher levels of service for the same time intervals: 81.7% of the population aged 3 to 5 years lived in 15 minutes walking distance from a pre-school; 84.7% of the population aged 6 to 14 years was up to 20 minutes from a basic school; and 56.2% of the population aged 15 to 17 years was up to 25 minutes from a secondary school.

**Figure 5 Population coverage and territorial coverage of non-tertiary educational institutions (2016/2017) on foot, by education level, mainland Portugal and NUTS 2**



Source: Statistics Portugal, Buildings Geographich Database, Census 2011. Ministry of Education and Ministry of Science, Technology and Higher Education - Directorate-General for Education and Science Statistics. Directorate-General for Territory, Official Administrative Map of Portugal (CAOP). Open Street Map (OSM). Open Route Service (ORS).

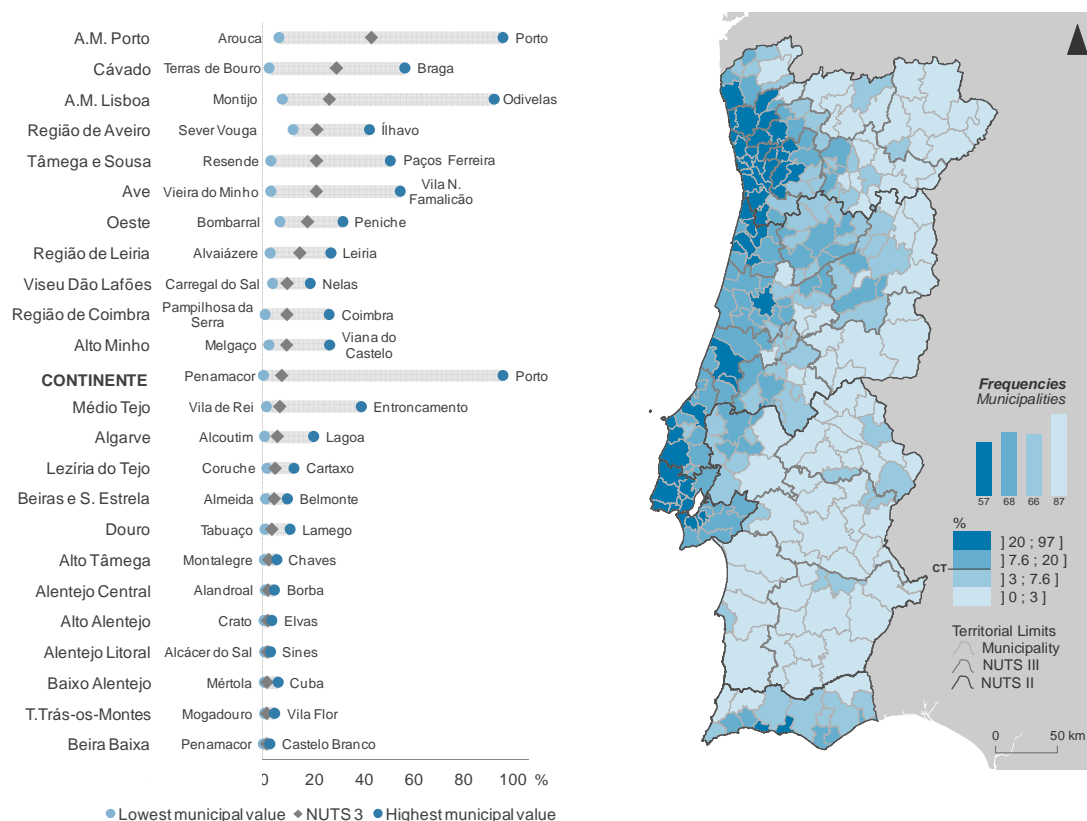
Note: The operationalization of the territorial coverage considered the non-tertiary educational institutions of the 2016/2017 school year and the distribution of the resident population of the 2011 Census.

*In the 2016/2017 school year, more than 90% of the territory of Porto and Odivelas municipalities was in 15 minutes walking distance from a pre-school and basic school*

In the 2016/2017 school year, 57 municipalities had more than 20% of their territory within 15 minutes walking distance from a pre-school and, in the case of basic education, the number of municipalities corresponded to 53. These municipalities were mostly concentrated in the metropolitan areas and in the municipalities surrounding Área Metropolitana do Porto. The municipalities of Porto and Odivelas had the highest surface area covered (over 90%), both in pre-school and basic education. In addition, the municipalities of Paços de Ferreira, Vila Nova de Famalicão and Braga with more than 50% of their territory served by pre-school institutions at a distance of up to 15 minutes on foot

stood out, as were the municipalities of Paços de Ferreira, Vizela and Braga in terms of territorial coverage by basic educational institutions.

**Figure 6 Territorial coverage of pre-school educational institutions at 15 minutes walking distance, mainland Portugal, NUTS 3 and municipality, 2016/2017 school year**



Source: Ministry of Education and Ministry of Science, Technology and Higher Education - Directorate-General for Education and Science Statistics. Directorate-General for Territory, Official Administrative Map of Portugal (CAOP). Open Street Map (OSM). Open Route Service (ORS).

### III. The territorial differentiation of the housing market

The analysis on *The territorial differentiation of the housing market* presents the results of several statistical operations for the framework of structural and short-term factors associated with the recent dynamics of this market, and the results of Statistics on prices, rents and income at the local level for the analysis of the values practiced and the potential access of households to the renting and housing purchase market.

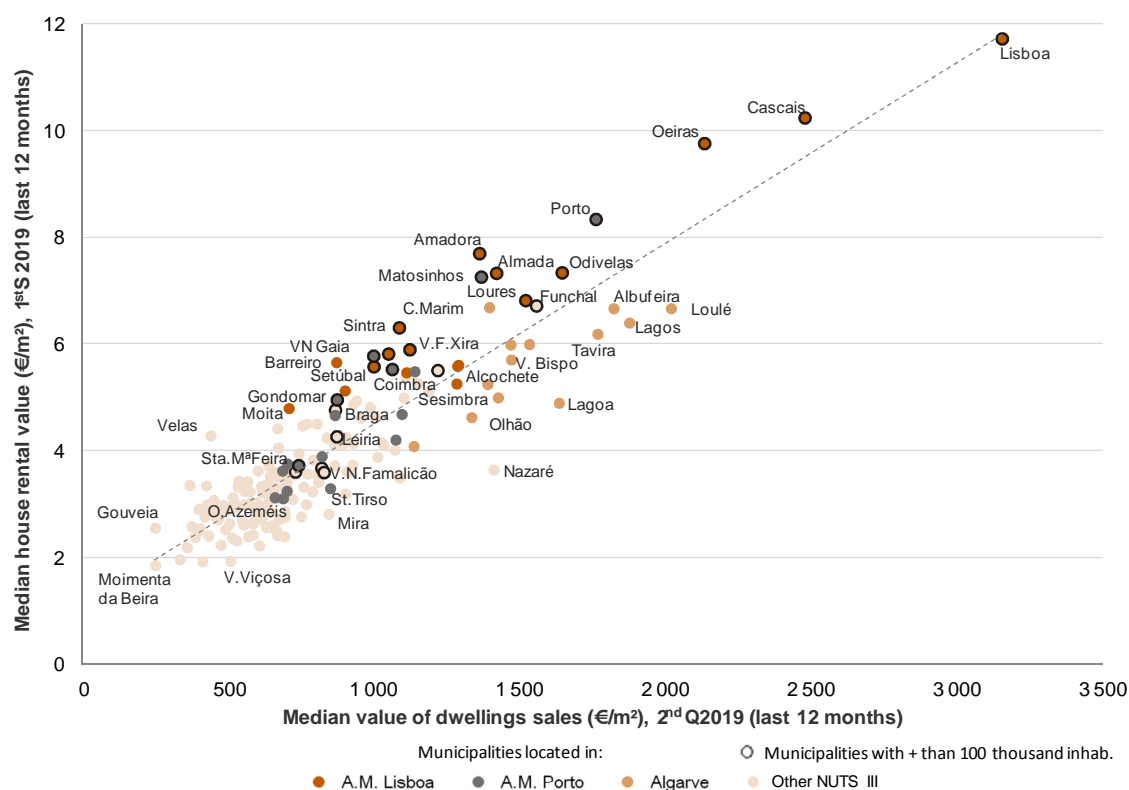
Figure 7 shows the position of municipalities regarding the rental value per square meter from new lease agreements with the price per square meter of housing purchases. Despite the different size and nature of the markets for house purchase and rentals, the analysis at municipality level reveals, to some extent, an association between the level of market values<sup>1</sup>. Figure 7 highlights three municipalities with higher values per square meter than the rest of the country: Lisbon, Cascais and Oeiras. Taking the trend line as a reference, there is an apparent overvaluation of rental

<sup>1</sup> Pearson correlation coefficient is 0.91.



values in relation to housing prices in most municipalities of Área Metropolitana de Lisboa - with the exception of the municipalities of Sesimbra and Lisboa which are on the trend line - in most municipalities of Área Metropolitana do Porto and, globally, in municipalities with more than 100 thousand inhabitants. In contrast, there is a relative undervaluation of rents in most municipalities of the Algarve.

**Figure 7 Median house rental value per m<sup>2</sup> of new lease agreements of dwellings and median sales price per m<sup>2</sup> of dwellings, by municipality**



Source: Statistics Portugal, House rental statistics at local level. Statistics on house prices at local level.

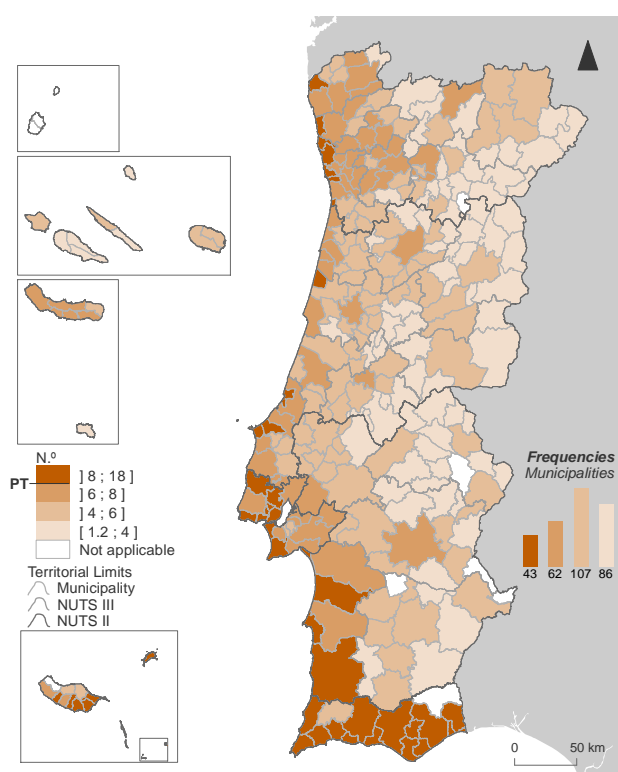
Note: Information on new rental contracts refers to the 1<sup>st</sup> semester 2019 (last 12 months) and information on sales of dwellings refers to the 2<sup>nd</sup> quarter 2019 (last 12 months). The graph shows the 198 municipalities with information in the House rental statistics at local level.

*In 2017, 43 municipalities located mainly in the Algarve, Alentejo Litoral, Região Autónoma da Madeira and Lisboa and Porto metropolitan areas showed ratios between house prices and income above the national value*

In 2017, the house price of the reference household was 8.0 times higher than the median value of the disposable income of households in Portugal<sup>2</sup>. The analysis at regional level shows the Algarve region (13.1), with the highest ratio between house prices and income and, still with values above the national reference, Região Autónoma da Madeira (9.9) and Área Metropolitana de Lisboa (9.5). In 2017, the Alentejo region had the lowest ratio between house prices and income (5.6), showing a greater capacity for house purchase.

In 2017, 43 municipalities presented ratios between house prices and income above the national value, located mostly in the sub-regions of Algarve (14 out of 16 municipalities), Alentejo Litoral (3 out of 5), Região Autónoma da Madeira (6 out of 11) and the metropolitan areas of Lisboa (9 out of 18) and Porto (5 out of 17). Particularly noteworthy are the municipalities of Lisboa (18.0), Loulé (17.0), Lagos (16.5) and Albufeira (15.8).

**Figure 8 Ratio between house prices and income, Portugal and municipality, 2017**



Source: Statistics Portugal, House rental statistics at local level. Statistics on house prices at local level.

Note: Results are presented for municipalities with 2 000 or more taxable persons and a minimum number of 15 transactions.

The municipalities with the lowest ratios between house prices and income - showing situations of greater financial capacity for acquisition - were mainly located in the Interior of the mainland Portugal and in Região Autónoma dos Açores.

<sup>2</sup> **Ratio of house prices and income:** (Median value of sales per m<sup>2</sup> of dwellings x median area of dwellings sold) / Median value of gross income less personal income paid tax.

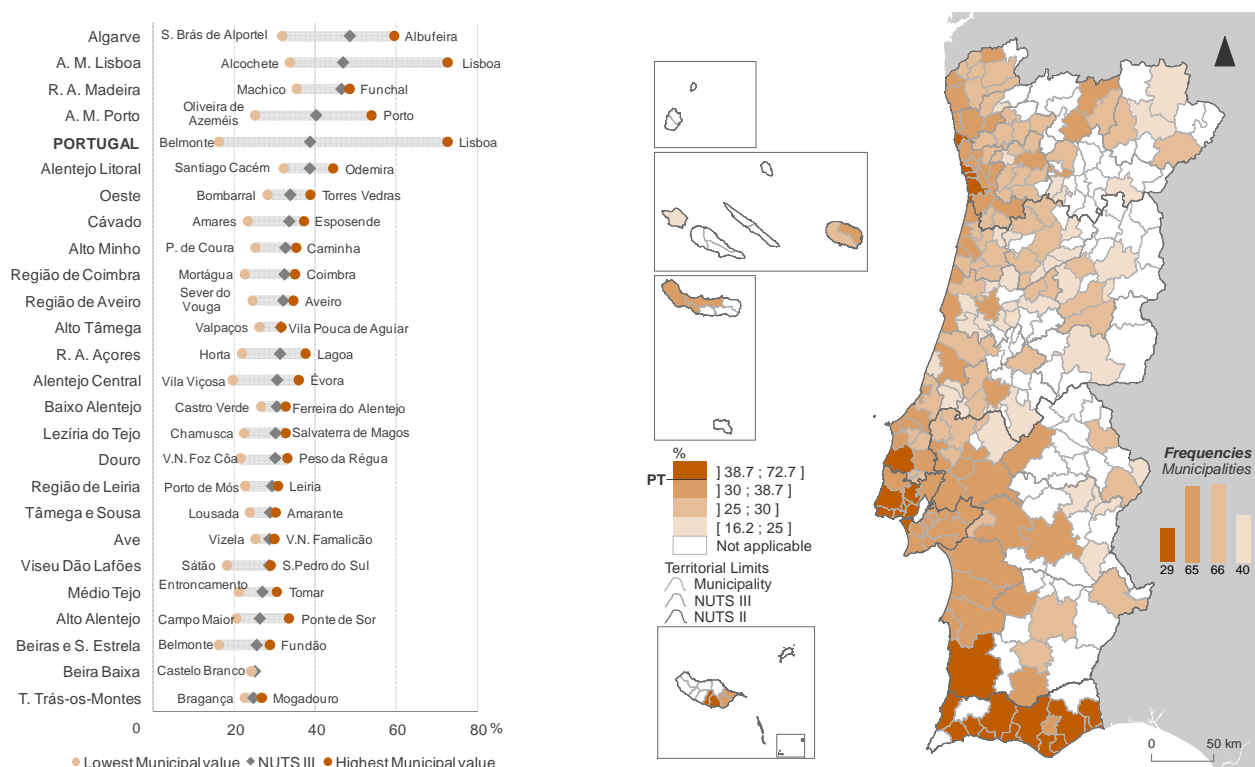
For the purpose of calculating this indicator, a reference area is assumed for all territorial units: median area of dwellings sold in Portugal (95m<sup>2</sup> in 2017).

*In 2017, the ratio between house rental values and income was higher than the national value in the Algarve (48.9%), Área Metropolitana de Lisboa (46.9%) and Região Autónoma da Madeira (46.5%)*

In 2017, the median house rental value of new lease agreements of dwellings for an 81 m<sup>2</sup> accommodation represented around 38.7% of the monthly disposable income of households in Portugal<sup>3</sup>. At a regional level, the ratio between house rental values and income was higher than the national value in the Algarve (48.9%), Área Metropolitana de Lisboa (46.9%) and Região Autónoma da Madeira (46.5%). In turn, the Centro region (30.3%), Alentejo (30.5%) and Região Autónoma dos Açores (31.3%) showed the lowest values, below 35%.

The analysis of the indicator at municipal level highlighted, in 2017, a concentration of municipalities with higher values in the sub-regions of the Algarve, Alentejo Litoral and the metropolitan areas of Lisboa and Porto. In 2017, in 9 municipalities - Albufeira, Loulé, Lagos, Tavira and Vila Real de Santo António, in the Algarve, Lisboa and Cascais in Área Metropolitana de Lisboa and the municipality of Porto in Área Metropolitana do Porto - the house rental values were 50% higher than the households' disposable income. On the other hand, in the municipalities of Belmonte (16.2%), Sátão (18.2%) and Vila Viçosa (19.6%) the monthly charges for house rentals did not exceed one fifth of the household income.

**Figure 9 Ratio between house rental values and income, Portugal, NUTS 3 and municipality, 2017**



Source: Statistics Portugal, House rental statistics at local level. Statistics on house prices at local level.

<sup>3</sup> **Ratio of rental values of housing and income:** (Median house rental values per m<sup>2</sup> of new lease agreements of dwellings x median area of house rental values of new lease agreements of dwellings) / (Median value of gross income less personal income paid tax / 12) x 100. For the purpose of calculating this indicator, the median area of house rental values of new lease agreements of dwellings for Portugal in 2017 was assumed: 81 m<sup>2</sup> for all territorial units.